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THE SOUTHERN AGRICULTURIST.

(NEW SERIES.)

Vol. II. FOR JULY, 1842. No. 7.

AN ADDRESS ON AGRICULTURE.

DELIVERED BEFORE THE ALABAMA STATE AGRICULTURAL SOCIETY, ON 7TH DECEMBER, 1841.

By the Rev. Dr. MANLY.

(Continued from page 292.)

The apathy of the *Southern* planter is truly surprising. He, of all others, occupies a position which, if any thing can, should rouse requirement of his profession.

His circumstances are in the highest degree complicated and critical, and involve the greatest difficulty and responsibility. The general occupation of the southern and south-western States, that which employs the greatest number and the greatest wealth, is, and must be, agriculture. The planter must, of necessity therefore, exert a controlling influence on whatever of weal or of woe may occur, either to his own class, or to the commonwealth.

A single product, among many to which his soil is adapted—*cotton*, is so important to the pursuits and enjoyments of mankind, as to have already *given directions as to the industry and capital of the world*. Providence has placed under his control a laboring population, an entire class, whose proper management, so as to fulfil all its conditions, is itself a profound and difficult science; with whom a less exact economy is inevitable than is attained without trouble where the laborer's compensation depends on his personal care, skill, and dilligence; a population who, though owned in great numbers, and thus constituting the material and semblance of wealth, may be so managed as to bring about an unperceived and gradual, but certain, impoverishment of their owner. Over these, by the structure of society, he is at once constituted, Protector, Law-giver, Judge, Physician, and Governor; and is under instant and daily need of all the high qualities pertaining to these relations, if he would secure his own honor, interest and happiness, or any other of the ends of his callings. As yet no sufficient and general analysis of his soils has been made, so that he is not fully acquainted with their adaptations or their wants.

Of the improvements in agriculture made in other places, he is not able, if he wished, fully to avail himself; because his product, his soil, his climate, every thing is peculiar; and, results elsewhere obtained are falsified as to him. No general and enlightened system of

improvement, adapted to his own region and circumstances, is yet begun. No neucleus exists, at least in Alabama, (but, I trust, this reproach will be soon wiped away,) around which such a system might be formed. No stimulous is offered to inquiry or experiment. There are no means of concentrating and combining, for general utility, even the few truths which individual experience has elicited. He plods on, a blind captive to the usages of his predecessors, the propriety of which he does not take the trouble to consider. He has no help from his government, and provides none for himself; but commits all to an overseer, who as much needs instruction and management as any of the laborers committed to his care.

Yet he grows rich, in numerous instances. This he owes, not so much to his own efforts, as to the amenity of his climate, and the exuberant fertility of his soil, the accumulated alluvium of ages; which of course, cannot always last. Even in the present state of agriculture, such are the extraordinary advantages bestowed by Providence, it is probable that the next generation of men, inhabiting the cotton growing States, will be the richest generation of men upon the face of the earth. The transfer of all this wealth and power into the hands of that generation will be a serious contingency; for which the interest of the world demand that a suitable preparation should be made. The sons will inherit, indeed, the property and the ease which their fathers had procured for them, but, for any influences at present exerted, will they propably inherit their fathers' industry, business-habits, self control, economy, prudence, and simple manners?

In the present state of the profession, especially as to its intellectual culture, what will they do with the wealth and leisure thus thrown upon their hands? I cannot now follow out the train of fearful propabilities; but the inference I must not omit:—that every consideration of interest, patriotism, and duty, concurs in urging the adoption of every rational means for the advancement of the intellectual character of the profession; for the accomplishment of an immediate and settled union between the profoundest science and the labors of the field.

If indolence, voluptuousness, and profligacy are frequent attendants on an inheritance of wealth and leisure, since the connexion is not necessary, and since they are not peculiar to our institutions, the true inference is, that every exertion should be used to diffuse the taste for intellectual employments and pleasures; especially in the line of the almost universal pursuit. A large proportion of our planters will be in independent circumstances. Constituted as his establishment is, the degree of the planters own time and attention, necessary to be bestowed on his affairs, compared with what is required in every other trade or vocation, gives him an immense advantage in leisure, over all others. This is no trifling boon:—and the proper inference from it, is, that as we are likely to have the richest, so, unless we are false to ourselves, and abuse

the peculiar gifts of heaven, "we may have the largest class of liberally educated citizens that is to be found on the face of the earth."*

And of what benefit will this be to every form of social prosperity and happiness! The spirit of liberty among a community of slave-holders, it is said, is naturally "higher and more stubborn:" what need that this spirit should be carefully cherished and regulated under the benignant and softening shades of science and philosophy! The condition of southern planters is an aristocracy; akin to what is termed the "Nobility," in other countries.

As this removes us from the dangers of that adventurous and levelling spirit of agrarianism which aggitates the mass or other communities, emboldened by numbers, unrestrained by intelligence and morality, and excited to change by continual exigencies, how requisite that this aristocracy, itself, which is to form public opinion and gives direction to affairs, should "be of higher intelligence and higher characted, better able to distinguish and more willing to appreciate that which deserves their respect" or support?

The property of the country being chiefly concentrated on the agricultural interest, it will be requisite that legislation, chiefly desingned for the protection of property, should have a correspondent direction. What need that planters, themselves, the very persons interested, should be qualified by liberal studies and attainments, aside from the mare drudgery of their profession, to take a leading part in the framing of the laws?

The self-depreciated planter too often, thinks that he has nothing to do with politics; i. e. in plain English,—that he has nothing to do with protecting his own property, and providing adequately for his own interests. If an independent planter has no business in the legislature, which is to make laws for an agricultural country, a community of planters, will any one tell me what is a legislature, and what is its business?

There is an expression of Swift, deemed almost oracular, and assumed as a motto on the title page of our leading agricultural Journal, *the Farmer's Register*, from the application of which I take the liberty to dissent. It is this, "that whoever could make two years of corn, or two blades of grass grow, upon a spot, where only one grew before, would deserve the better of mankind, and do more essential service to his country, than the whole race of politicians put together." This assertion, which has been allowed almost the force of an axiom, assumes what certainly is not true,—that the range of the politician does not embrace agriculture, and that no system of civil policy can confer any benefit upon it. It would be much nearer the truth to say that "the *prosperity* of agriculture depends on the politician." This is but saying, that every pecuniary interest in a country, in proportion to its amount,

* Chancellor Harper of So. Ca.

depends on and claims the fostering care and protection of the politician.--Can that system of civil policy be equitable or wise which pretermits the chief interest of a country, the foundation and support of all the rest?—"Those politicians or statesmen, therefore, who, by removing every obstacle, and furnishing every proper encouragement to agriculture, promote its advancement," instead of not being worth so much as a blade of grass to the country, "have a higher claim to the gratitude of mankind, than those who have merely performed a secondary or practicle part; which part they never could have performed at all, but under the protection of wise laws, regularly administered, and executed with impartiality and vigor."*

How appropriate and judicious, then, in a country like ours, to provide itself competent legislators in its Agriculturists! May I be permitted to fortify these po-itions by quoting a great authority, that of Chancellor Harper, of South-Carolina?

He says, "It has often been a subject of complaint that the profession to which I have the honor to belong, obtains too great a control in political affairs, and perhaps there may be some ground for the complaint. Independently of their habits of public speaking, it is owing to this—that their studies and pursuits are most analagous to those of the legislator, and best qualify them to discharge the duties of that office. If this be an evil, it is plainly one that cannot be corrected until there shall be a class of educated and enlightened planters, who shall make politics their business, and qualify themselves for discharging the duties of legislation:—not by that perverted and superficial knowledge which is to be gained from newspapers and periodical publications; which is but one remove, and that, perhaps, not an advantageous one, from utter ignorance; but by a thorough investigation and comprehension of the principles and business of government. In every free government,—that is every government of laws, lawyers must have much to do with the business of legislation; but undoubtedly it is desirable that the predominating influence should be that which is identified with the great and predominating interest of the country. And the statesmen thus formed, of more liberal views, and untramelled by technical habits, will have much advantage over the professional lawyer. It has been observed, that eminent lawyers have not risen to the highest rank as politicians, or come into advantageous comparison with statesmen who were not lawyers. There will be nothing more to desire in relation to government, when its affairs shall be chiefly under the control of such a class of liberal, high-spirited, disinterested, independent, and enlightened statesmen.."†

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* Sir John Sinclair.

† Anniversary Oration before the S. C. Society for the advancement of Learning, p. 19.

It may be that the geographical position of the southern part of North America, taken with other circumstances, may always reserve for the planters of this region nearly a monopoly of the cotton market. On this subject, I am no alarmist, certainly; but those who lay any special stress on this consideration, and who might be tempted on account of it to allow of a negligent agriculture, would do well to remember that a too confiding spirit has lost many an advantage that seemed to be as naturally and inalienably its own, as in this case. The extraordinary exertions of the Hon. East-India Company to introduce the cotton culture in the British posessions in India, though stimulated and sustained as they are by all the power of Great Britain, may provoke a smile from the arrogant uncalculating planter; but it appears to be a fact, established by the statistics of the cotton trade, that cotton from Asia has been introduced into England within the last few years, in double the ratio of increase, as from the southern Atlantic States.

Take the results of the year 1839 and '40 for an example. The importation of India cotton into England in 1839 was 49,233,959 lbs.; in 1840, it was 76,703,295 lbs.; more than doubling in two years.

Every fact therefore, with relation to this subject, is of direct interest to us. We know that from various causes, chiefly the diffusion of education and Christianity, a better race of men is rising up there; while intestine wars of the petty princes, and the waste of life and energy, are restrained and prevented by the strong arm of British power. The trading charter of the E. I. Company is abolished, and their political powers are modified, with a view especially to raise the agriculture and commerce of the country from its hitherto depressed state. England is rapidly introducing there all her improvements in machinery, applied to manufacture or locomotion; is investing immense amounts of capital in agriculture, as well as commerce; and by her discriminating and restrictive policy, gives the produce of their colonies vast advantages in her own markets, over those of our own country. Our cottons are there, our citizens are there, our gins and screws, our industry, enterprize and skill are there, stimulated in every way that science and munificence can suggest. There is the congenial climate, and there the congenial soil; of which, as cultivated in rice, Dr. Roxbury says, that he "never knew or heard of an Indian farmer manuring his rice-field; yet these fields have probably for thousands of years continued to yield annually a large crop of rice, on an average of 30 to 60 fold." Can any reasonable man doubt that these causes combined, will make themselves felt, in a course of years, in our cotton ware-houses? Distances in these days, are becoming as nothing. Steam has triumphed over space; and the agriculture of India, at no very distant day, will offer strong competition with that of Alabama, in the markets of Europe.*

* See "Facts relating to India" in the Cultivator.

But suppose all apprehension from this source be banished as groundless; the extent of the country which can profitably grow cotton, not only now in cultivation, but yet to be opened, the demand for the finer qualities of staple, the exhausting tillage to which the soil is universally subjected, the changing relations of countries, the care of other interests, besides that of the cotton crop, the necessity for new products, the maintenance of domestic comfort, and of agricultural independence, the progress science and arts, and the growing wants and expenses of a family, will always furnish both ample scope and a stern necessity to each cultivator for a constantly improving husbandry.

No truth in political economy is susceptible of clearer demonstration than this,—that the demand for our cotton being the same, the aggregate value of each annual production, will in the long run, be, substantially the same.—Demand being constant, when less is made a less quantity represents a greater amount of value; what is lost in the number of pounds produced, is made up in the price given.

And so, cotton, valuable as it is, may be too abundant for the highest gain of the grower.

It is always too abundant when it is more than can be well tended, carefully picked out, and neatly handled, free from trash and stain, by the force employed upon it. It is always too abundant, when other branches of rural economy, adapted to the location, and necessary to subsistence and comfort, have to be neglected for the sake of it. It is always too abundant, when the entire annual cost of obtaining supplies from abroad, is greater than the annual interest on the investment necessary to produce them at home.

On this subject I would like to speak out, at large; because I believe that there is a radical error prevalent in the entire cotton-growing country. But it is an interest too unwieldy for an obscure individual to move even a limb, or the loose folds of its vesture; and there are so many clear heads and ready pens appropriated to it, that I forbear. True to my object, however, I will still venture to suggest that the improved agricultural knowledge which I am urging, will enable each cotton planter to determine, for himself, the true economy of its production.

What I may yet say on this subject will proceed on the supposition, that the greatest amount of production is the truest economy.

And here, what a scope for intelligent inquiry, experiment and enterprize! On no one point has the ultimatum been reached; on many, a commencement has not been made.

Experiments for the improvement of Agriculture, as they require, when conducted to the best advantage, considerable surplus wealth, much time, patience, and accuracy, and the highest qualities of intelligence; and as, when successful, they issue in the most momentous results, are worthy the first efforts of genius, and the highest aspiration of patriotism.

No improvements are made without experiments. It is true, they are not absolutely confined to the rich. There is even an advantage, when practical men of limited means, who live by the returns of their labor, can be induced to try them. These will always make them on a plan in which failure will not be injurious, and success will be universally beneficial; because the poorest may copy out the processes and realize the results. But it is a duty specially incumbent on planters of substantial independence. Some experiments, of course, will be failures; and such are able to hazard something. The fear of being thought visionary, may deter men from a course of experimenting.

And what if the imputation should actually be made? This is what has happened to every individual who has devoted himself to the enlargement of the boundaries of knowledge. But even visionary schemers are a more deserving class of men than those who will attempt no improvement. For, from the results which they reach, though useless to themselves, wise and practical men will derive important hints; and thus, incidentally, they do good; while, as they never set out to get rich, their failure is the less disappointment to them, and they do not need our pity.

I must not be met here, by the insane outcry against "book-farming," and against science as useless to agriculture. I wish not to argue the question on general principles, with this class of objectors. I will advert to facts too stubborn to be overthrown,—to facts too near the cotton planter's interests and feelings to be disregarded, or overlooked.

Every planter knows something of the depredation of the "*Lice*,"—the little insects that prays upon the cotton when very young, in the spring. Another familiar enemy is the worm that perforates the boll in August. Either of these is sufficiently injurious alone: and sometimes they are both, in their seasons, propagated and carried through their transformations in the same field.

Will any planter present consider for himself what average deduction from the cotton crop of Alabama should be made, arising from these too causes? We know that, in some seasons, the loss amounts to half the crop. And what, in round numbers, is the average market value of the cotton crop of Alabama, unreduced by the depredations of those insects? The average crop now, is about 300,000 bales; worth at least $10,500,000. Suppose, it diminished one fourth, the average annual loss, would then be over $2,600,000. This year has been much less destructive than many years are, perhaps less than the average of years. And yet a single planter of Perry county told me, a few days ago, that in this very year they had destroyed for him, at the least calculation, 400,000 lbs. of seed cotton; worth $8,000! Science, it is true, may cost something, but ignorance cost much more! We hear much of the burdens of education. But here is a clear annual contribution to

ignorance, of $8,000 from one man; and all the planters in the State have contributed in the like proportion.

Science spares the illiberal, the unwilling; but ignorance, is all comprehending, inexorable, and resistless.

Now, suppose that any foreign enemy sweeping our cost, or any savage foe lurking on our frontier, should annually levy a contribution, by open force, or secret violence, equal to the depredations of these insects, how would this be entertained? Although but few persons comparatively were interested, every man in the State would be ready to fly to arms,—the whole power of the General Government would be roused to resistance; and neither land nor sea would furnish hiding-places so remote or obscure, nor fortresses so impregnable, as to shelter the aggressors from merited vengeance. Millions on millions would be lavished, and life profusely devoted, in the patriotic effort to arrest the depredation.

But here is a depredation, that goes on from year to year, "laying taxes without our consent," to an amount not only *indefinite, but absolutely incalculable*, upon the whole body of Southern Planters, and through them upon the whole Union; and yet the whole body of them, the high-minded and chivalrous, the keen and calculating, the bold, restless, and idomitable together, tamely *pocket* the affront! The colossal, and almost resistless power of Great Britain could not collect from our feeble colonies in '76 a paltry tax of 3 pence a pound on imported tea, levied without their consent! But here is the richest production on the face, or in the bowels of the earth, cut off sometimes by half; and the richest body of men that ever lived on it, foiled, discomfited reduced to abject submission, that scarcely think of the means of protection, by an insect, a butterfly, a louse, a maggot!!

It is already in the minds of some of this audience to say, "This is a providential infliction, and there is no contending against Providence." So are 'briers and thorns' a providential infliction; but that is no reason why we should not cut them out of our fields. So is sickness a providential infliction; but there is no reason why we should not seek to prevent and cure it.

The present state of man is a state of *trial*. As there are many facilities opened by Providence, for the purpose of trial, not to be used, but avoided, so there are many obstacles interposed from the same source, not to discourage and thwart us, but to test our ingenuity, and resolution, and perseverance in overcoming them. And this is one of them: nor could men be placed in circumstances more favorable for contending with such a foe than the body of Southern Planters. They have wealth, leisure, and intelligence, and have not been thought deficient in energy. The result to be reached is of such magnitude as should provoke the ambition of the most cultivated, wealthy. The Philanthopist, even, could find no field more fit for the exercise of his high powers.

Were any person possessed of the secret by which in an easy, practicable method, these enemies of the cotton plant might certainly be prevented or dislodged; what might Alabama *afford* to give for such a secret; Millions! Millions!!

But it is really the case that a remedy for these ills is within the range of science? True science is modest, and does not assume to itself omnipotence, nor even seek a favor by boastful pretensions. An answer to that question, however, may be inferred from her achievements in kindred branches of practical knowledge, known and read of all men; and from a view of the nature of the case.

On this subject, as the humble advocate of science, I would content myself with suggesting, that it is possible to capture some of these insects, to keep them supplied, in confinement, with every thing they could find in the fields, to oblige them to carry on all their operations, and pass through all their transformations, under the scrutinizing and unremitted observation of scientific and practical men; who would mark all the phenomena, their periods, their habits, their mode of propagation, their transformation, their winter abodes, and the circumstances which gives them influence.

I ask now any plain, common-sense, unlettered farmer, if their is not a glaring probability that such investigations, perseverd in, might give the planter a hint by which he could adopt means, at least for the mitigation of the evil, so as to render it comparatively harmless? Who now fears the Hessian fly? This minute depredator was once the source of more real dread to the people of the United States, than all the hired, whiskered myrmidons that ever trod, in all time, upon the territory of the Land-Grave of Hesse, could they all be collected in one mighty armament. It threatened to cut off the subsistence of our people. We are indebted, I believe, to the quiet investigation of a scientific *Lady*, for such a knowledge of the habits of this insect, as to enable the farmer, in all seasons, to escape its depredations.

Who will deny the possibility of success, in the instance of the cotton insects? We are sure that ignorance and inactivity will not find a remedy; *perhaps* science may. And the whole cost of the experiment for all time will not amount to the tenth part of what ignorance is now levying upon us, year by year!—It may cost the expense of an experimental farm, with suitable buildings, appurtenances, and apparatus. It may cost the means of engaging the services of some four or five scientific men, skilled in a natural history and chemistry; practical, laborious, pains-taking men, who will be exclusively devoted to all inquiries affecting agriculture, joined with a communication of a thorough professional education, manual and intellectual, to all classes of our young men, who intend to be planters. It may cost this:—the setting apart, in a permanent investment, of some $250,000 perhaps, of the people's money, to do what may

be styled, if ever any thing on earth could, *the people's own business.*

Could we even suppose it propable that the experiment would fail as a means of extermination of the insects in question, can any reasonable man doubt for a moment what would be the effect on the general interest of agriculture, of such an establishment? A body of able men professionally and exclusively employed in applying the deductions of science to the actual tillage of the soil, to the development of all its adaptations and resources in every part of the State, to the suggestion and proper trial of every species of improvement in all the productions and arts of Husbandry, to the training up, by the union of study and personal labor, of a race hardy, virtuous, enlightened cultivators of the soil,—the foundation and defence, the bone and sinew, the right eye and arm, of the Commonwealth?

Gentlemen, it is too plain to admit of a doubt, that such an establishment would, in the course of fifty years, repay to the State in one form or other the cost of the investment, *one hundred times over.*

In fact, the benefit would be incalculable; simply because the value of agricultural production is so. There never has been and there never can be, a perfectly accurate estimate obtained of all that is made, and consumed, about all the farms in a country; and to attempt to estimate the pecuniary value of well-attested improvements, introduced systematically into every branch of rural economy, through every cottage and farm-house in the land, would defy the power of calculation itself. Little in themselves, they pass unnoticed; but viewed in the aggregate they swell into surpassing importance—they constitute a nation's wealth or poverty—a nation's glory or disgrace. So, the mighty Mississippi, the father of waters; is made up of its thousand of little streamlets.

Now, though little accustomed to speak on matters of civil policy, I would venture to suggest to the planters of the State, whether, through their agents, the Legislature, they ought not to establish an Institution of this kind, supported by the public purse. In the words of the illustrious Washington, in his last Message to Congress, I would ask, To what object can it be dedicated with greater propriety?"

Why should every profession and art have its schools, and receive its measure of public patronage, save that which is the most profoundly seated in the depths of science, the most elevated, the most useful of them all? The Lawyer, the Physician, the Clergyman, the Merchant, the Seaman, the Mechanic, all have schools devoted, to the better preparation of their minds for their several vocations. The farmer alone is deemed to be, and is doomed to remain, as to a scientific knowledge of his profession, incurably, *a fool!* There is a measure of knowledge, indeed, which every man must obtain, on this subject, who lives in the world and opens his eyes upon the objects around him, as he passes. But so there is on a multitude of other subjects. Is that any reason why the mind may not be much

more highly improved, on such subjects, by special scientific study. What would become of Law, of Medicine, if the practitioners were left to the notions upon the subjects that they find floating in the circles with which they mingle? Why does not the same hold good of Agriculture? If there be any difference, it only tends to show that Agriculture is of so much more general and absolute importance to the world, that a much greater measure of what science might do for it is forced upon mankind, independent of their efforts or will. But does this prove that the only source of information is the common mass of crude and conflicting notions prevalent in a community; many of them generated by ignorance, and kept alive by prejudice? As well might we attribute light to the atmosphere, as its *source*, because we find it diffused there. We do not reason so upon any other subject. In other businesses, we thankfully accept the little knowledge that we can glean upon the bleak and barren common; but we are willing to seek for richer fruits, and more nutritious pasture, *at grater expense*, in the cultivated enclosures. We would not despise, in an hour of need, the well-ment but scanty charity of the way-side; but this should not prevent us from hasting, with all energy that may remain, to the comforts of our own peculiar and well provided home.

What then has Agriculture done, that she should be denied, in her languishing and depressed state, at the family mansion where she has sought a refuge, the aid of a sustaining hand, or even the consolation of a kind look? That she alone should be thus disinherited, disfranchised,—an outcast.

Many a *prodigal*, on which the "portion of goods that falleth to it," had been prematurely or inconsiderately lavished, that had well nigh beggared the family, has returned penniless, famished, disgraced, and with but little better promise for the future; and found, notwithstanding, a warm reception, and an expensive entertainment.

But even the name of Agriculture seems to be obliterated from the family records. It does not once occur on the statute book of the National Legislature: I am not aware, whether the word itself is to be found on that of our State. Of its utility to the well-being of the great family of man, the common Father and Provider of the household, might well acknowledge, in the words of the Parable "*Thou* art ever *with* me; and all that I have is *thine*." And it is not *He*, but *ourselves*, that deny it even "a kid, that it might make merry with its friends."

I ask again, in the name of all the experience and common-sense of the world,—"what wizard spell—what fatal darkness has blinded the eyes of our public councils so long to the great agency of human prosperity?"*

If these walls could be rendered susceptible of emotion, and vocal, I would invoke them to receive the impression of the momen-

* Hon. Chilton Allan, of Kentucky.

tous truths I am now uttering, and echo them upon the ears of the Legislature, morning after morning, and year after year, in tone so loud and thilling as to drown the din of party, the clangor of debate; and awaken them from the dreams and reveries of minor interests. to the vital, all-absorbing nature of this subject; that so they might arouse the still more deeply slumbering people.

But I forbear.

For my part, such are my convictions upon this subject, that I should seteem it the highest civil honor and usefulness of my life; were I capable of filling a place in such an Institution, with adequate benefit to the public; or could I even be instrumental, in any way to its establishment.

But let not my views be confounded with those which have led to the establishment of what are called "Manual Labour Schools," in this country. I respect the motives and aims of the founders of these schools, but so far as I am informed, they have all proved failures;—either totally, or with reference to the peculiar advantages expected. And this might have been predicted, from principles inherent in their constitution.

What I have in view in these remarks, is not a school for general learning, nor an establishment to perform the functions or to supersede the University, or any other existing Seminary; but a *strictly professional School*, adequately endowed and supported at the public expense. The idea is not new. Some partial, but respectable begininngs have been made, I understand in the neigborhood of Boston. If we turn our eyes to the Old World, we shall find them, after the lapse of ages, beginning in good earnest, to open their eyes and direct their efforts to that which most of all concerns them—the provision of suitable training for the Agricultural classes.

"There are three institutions of this nature in France, of course utterly inadquate to the wants of this large class—but furnishing, in some degree, a model for scientific and experimental schools of Agriculture. One is at Grignon, near Naulphe (Scine et Oise.) It is a farm of 500 acres, of every various soil, with wood of different kinds, water-courses, a large lake or piece of water, irrigated and water meadows: all inventions in agricultural implements and machinery, are brought to trial; the farmyard contains every kind of cattle; teams of all sorts and breeds, Swiss, Norman, and cross breeds of bulls and cows; 1000 heads of sheep, Merinos, English, Artesian, Sologness, Vendomese; with all the cross breeds; swine of the English, Anglo-American and Anglo-Chinese breeds; threshing machines of the best kind; a cheese-dairy, a boatanic garden, a nursery garden, an orchard, and mulberry plantations. The course of instruction lasts two years. In the first year are taught:—1, elementary mathematics applied to mensuration, taking plans and levels: 2, topography and drawing; 3, practical elementary physics and chemistry, practical botany and vegetable physiology, and applied to cultivation and planting; 4, first principles of the veterinary art; 5, rational

principles of cultivation and farming; 6, principles of rural economy, employment of captial and internal management of farms.—In the second year are taught:—1, principle of husbandry in their application to the art of production and its employment; 2 mathematics as applied to machanics and hydraulics, and the elements of astronomy; 3, physics and chemistry as applied to the anaylsis of earth, waters, manures, &c. distillation, and economical employment of heat; 4, mineralogy applied to the use of various fossil substances, boring and sinking wells; 5, culture of the kitchen garden and orchard woodman's craft, and the knowledge of useful or distructive insects; 6, rural architecture, as applied to buildings, roads, water-dams, drains, &c., making of lime mortar, cement, &c.; 7, law, as relates to property in land; 8, principle of *hygiene* for men and animals. All the courses are illustrated by practical experiment in winter and summer. The pupils are taught to guide the plough and to use other implements of husbandry, and to study all the details of internal management. The pupils are free pupils. or house-boarders; the first must be twenty, the latter fifteen years old. The expense for free pupils is $300; for house-boarders, $260 with $60 more for a separate apartment. There are twenty-five scholarships of $60 given for house-boarders.

The Institute Agricole of Roville appears to be a much smaller establishment. That of Grand Jouan (Loire Inferieure) is situated in a department which contains a vast deal of heath and shifting-sand. It has a more extensive farm than Grignon; has 500 hectares of land of every kind of quality; and the object is to bring this into cultivation. It professes to teach—1, practical, 2, theoretic agriculture. There are courses of lectures apparently as extensive, though differing in some part from Grignon. The expenses is to 250 francs per quarter. The pupils remain two, three or four years, according to their capacity and progress. There is also a course of agriculture, in the Conservatoire des Arts et Metiers at Paris, and an Ecole Royale Forestiere at Nancy."*

Such is a brief sketch of what is attempted in France. The references might be extended.

If only the class intending to be overseers and managers of plantations, were to receive the benefit of such an education and training, who can estimate the amount it would add to the wealth of the country and the comfort of all concerned, by increasing the respectability and efficiency of this necessary class of men? Would it not be a grand era in the history of husbandry? Might not the planters find it an immense economy, themselves to institute and maintain such a school?

In the absence of such facilities, there are yet means of improvement immediately accessible and practicable.

1. *First* among these, I would name Agricultural Publications;—of which there are several, ably conducted, in our country. The

* From a late French work on Education, extracted by the S. S. Journal.

cost of information derived in this way, trifling in itself, is not a tythe of the benefit sensibly and immediately conferred. A respectable planter told me the other day that he could not *afford* to take one. I will answer for it, that if he will take a good one for a year, he will be better able to afford the expense of them all, than he can afford to be without them. Agricultural Societies might do something, in this way, by adopting some of these periodicals for a part of the premiums they offer; thus answering the double purpose, of giving encouragement, and diffusing information.

2. Associating together, for the purpose of mutual excitement and aid, is another important means of promoting this great end. Who that has seen the accounts of the periodical meetings of Farmers in Boston, for the purpose of free conversation among plain practical men, but must be sensible of the very great advantage likely to result from them?

3. The keeping of a farm Register—a sort of Journal of all proceedings and their results; carefully noting whatever may throw light on the principles and means of success, is a cheap and certain way of improvement. *No man can keep such a record as this for seven years without becoming a successful planter.*

4. The Legislature might, at least, appropriate annually a few thousand dollars, to be distributed, under the direction of a Commissioner, or Commissioners, *in aid of individual activity and enterprise*, in the different counties of the State. Experience has shown that public funds distributed among the people accomplish no valuable result, except as they are subsequent, and auxiliary, to the *personal* efforts and sacrifices of that people themselves. What I would suggest is, that a law be so framed, as that whenever a county society should exhibit the fact of its formation, and a copy of its constitution to commissioners appointed for the purpose, the said commissioners should be authorized to appropriate, out of the fund committed to them, a sum equal to that raised by the society itself, *not exceeding a given amount;* and that such society should receive no further distribution until they had made a fair exhibit of the manner in which the previous one had been applied, and the results of their operations and experiments. A wholesome stimulus would thus be applied, in a manner safe to the public purse, and, (by engaging *private funds* and personal interests, as well as the spirit of emulation,) best calculated to make every dollar effectual to some valuable object: while the annual reports of societies thus operating, digested and published by the Commissioners, would add incalculably to the mass of valuable practical information on the great interest of the State.

This, at least, is not a visionary, untried, or uncertain scheme.

Should the planters of the State be willing to see the adjournment of a single Session of the Legislature, without some such effort made? Prudently and cautiously, to be sure; with all salu-

tary checks and safeguards: but earnestly and in good faith, and on a becoming scale of liberality?

5. And why should not a Geological survey of this State, with a view especially to the interest of Agriculture, be attempted, by provision of the Legislature? This, too, is no untried experiment. During the last seventeen years Geological surveys have been commenced in nineteen of the States, and two of the Territories of the Union. This embraces an area of nearly 700,000 square miles. During the last four years, the General or State Governments have employed twenty-five principal Geologists, and four Assistants. Even a superficial observer, in passing through the State, must discover that the Geology of Alabama is strikingly interesting. And the few hints on the subject which have been collected at the University, by such means as we possessed, are sufficient to convince us that very important benefits, are to be expected from a thorough survey, judiciously, practically conducted, with relation both to Agriculture and the Arts;—important to the land-owner, the manufacturer, and the merchant. I fully accord with the sentiment which prescribes *economy* as the law of our public expenditure. But a *sound*, *enlightened* economy: an economy, which, in the shortest time, at the least expense, and by peaceful, constitutional methods, shall develope all the resources of the State, physical, intellectual and moral; and make us as wise, as good, and as happy as we can be. What, let me ask, would be the economical value, to the people of Alabama, of an intelligent report, widely circulated, embracing, among other things, all the improvements now actually practised, in the State, in every branch of rural industry? The glorious era, from which all the triumphs of Agriculture in England now date, is 1793; when under the auspices of Pitt and Sinclair, an Agricultural survey was ordered, and public attention directed to this important subject. Then, Peers placed their sons with practical farmers for instruction; Chemistry and the kindred sciences, came to the aid of production; and Agriculture took its proper rank as the first and noblest science. Similar effects would follow a similar effort here. Our wealthy planters, like the princely land-holders in England, would educate their sons expressly for their own profession; assured that it affords scope for talents, facilities for intellectual improvement, and opportunities for personal distinction equal to any pursuits whatever. Indeed, in England, Agriculture is become the universal passion. At a late exhibition in Liverpool, 2,500 subscribers, at $5 each, joined the Agricultural Society. Noblemen, in rustic dress, were seen handling the animals, and guiding the plough. The young men of affluence are there abandoning other pursuits, and dissipations, and engaging ardently in their proper duty of promoting the agricultural improvement, and, by consequence, the happiness of the people. Such scenes may we soon behold in our happy country.

LECTURES ON AGRICULTURE.

Three Lectures on Agriculture, delivered at Oxford, on July 22nd and Nov. 25th, 1840, and on Jan, 26th. 1841; in which the Chemical Operation of Manures, is particularly considered, and the Scientific Principles explained, upon which their efficacy appears to depend. By Charles Daubeny, M. D. F. R. S. M. R. I. A., &c., Sipthorpian Professor of Rural Economy in the University of Oxford. Oxford, 1841 8 vo., pp. 106.

[CONCLUDED FROM PAGE 299.]

"The method recommended by a writer a late number of the "English agricultural Journal" (part ii. p. 135), to whom a prize of ten sovereigns was awarded for his Essay, consisted in first making a substratum of peat three-fourths and sawdust one fourth, spreading over it the dung from the cattle sheds, and the urine preserved for the purpose in tanks contiguous; and then, after allowing the mixture to remain exposed for a week, covering it with a fresh layer, nine inches or a foot thick, of peat and sawdust, or of peat alone.

"Several such alternations of peat and manure are to be piled one above the other during the winter, great care being always taken that the peat should be as dry as possible, by exposing it previously for several months to the weather.

"Now, it will be immediately perceived that these recommendations of a practicle farmer completely fulfil the conditions which theory suggest for making the best use of our manure, by first neutralizing the ammonia, and afterwards detaining it within the pores of a spongy substance, until it is spread over the land.

"The most effectual plan, however, of preventing its loss would seem to be, not to wait for the slower action of carbonic acid upon it, but to combine it directly with those acids which form from it salts fixed at common temperatures.

"Hence Liebig advises the addition of sulphuric or of muriatic acid, both cheap substances, to the other materials of the dung-heap, which, forming with the ammonia present, the sulphates and muriates of that alkali, would at once prevent any loss of it by evaporation.

"If these expedients be not adopted, it should at last be born in mind, that unless the means are taken to prevent it, the most valuable portion of the manure is constantly escaping, during exposure to air and sun, by evaporation, and also by draining off into the ground, whence, instead of a material culculated to afford a ready supply of nitrogen to the plant, we obtain an *effete* mass, in which that element is in a great measure wanting, and which, therefore, can only influence the growth of plants by virtue of the phosphoric salts and other fixed ingredients still present in it.

"These views also throw some new light upon the use of gypsum, or sulphate of lime, as a manure to certain crops.

"The fact that liguminous plants contain this substance as an essential ingredient, may in some measure explain its fertilizing effect on them; but it is also found servicable to turnips and cabbages, which do not appear to contain it; nor does it seem easy thus to explain the superior advantage said to arise from scattering it in fine powder over the leaves of clover and sainfoin, as is practised in France and in North America, and with such manifest good effect, that it is said, if the substance be partially applied to a field, the portions that have received this dressing may afterwards be distinguished from the rest by the superior luxuriance of the crop.

"Liebig, therefore, has suggested another mode in which gypsum may be beneficial to crops in general, by reference to the property which it posesses of depriving ammonia of its volatility, and thus preventing its escape into the atmosphere.

"This effect arises from the decomposition which takes place when sulphate of lime and carbonic of ammonia are brought together, the lime being converted into a carbonate, and the ammonia uniting with sulphuric acid.

"The above theory of its use being admitted, we may be encouraged to extend its application to other crops besides the Leguminosæ, and also to mix it with the dung of our stables, so as to prevent the waste of this valuable material, which is constantly occurring.

"Liebig calculates that every pound of ammonia which evaporates is equivalent to a loss of 60 lbs. of corn, and that every pint of urine would produce a pound of wheat. Hence it is evident how much waste must accrue from the negligent manner in which the animal manure of our stables is preserved.

"But the farmer must be reminded, that in either case, it will be necessary, that the sulphate of ammonia resulting from the action of the gypsum, should be brought into contact with some substance capable of slowly decomposing it, so as to supply ammonia to the plant.

"For there is no reason to believe, that the organs of a vegetable can decompose sulphate of ammonia, and if they were able so to do, the disengagement of free sulphuric acid in consequence, could hardly fail to be injurious to their structure.

"Now a soil consisting of pure sand, or of clay, would be incapable of acting upon this salt; but contradictory as it may seem to the fact, that carbonate of ammonia is decomposed by sulphate of lime, carbonate of lime does appear in a slight degree to disengage ammonia even in the cold, as may be seen by the change of colour produced in a piece of turmeric or reddened litmus paper, placed over a vessel containing powdered chalk, as soon as it is moistened with a solution of sulphate of ammonia.

"And since this interchange of constituents is effected rapidly under the influence of a high temperature, as happens in the common method of obtaining carbonate of ammonia artificially by double decomposition, it is worth inquiry, whether it may not be favored likewise by exposure to solar heat and light.

"Where calcareous matter therefore exists in the soil, ammonia may be slowly supplied in this manner to the growing plant; and it is possible even, that the carbonate of lime, which seems to be generally present in the sap, may act in the same manner.

"In this way we may readily explain the use of scattering gypsum over the leaves of clover shortly before a shower of rain. The ammonia present in the latter is thus detained, and converted into sulphate by the action of the gypsum upon it, and when introduced into the system by the absorbing surfaces of the plant, it may be again converted into carbonate, by the slow action of the carbonate of lime present in the sap.

"When, however, a more rapid disengagement of ammonical gas is required for the nutrition of the intended crop, we ought not to trust to the slow action of carbonate of lime, but should apply quick-lime to the spots over which the manure has been scattered.

"It is probably in part by setting at liberty the volatile alkali imprisoned in the soil, that quick-lime acts so beneficially in agriculture, and in particular, that improved soil containing a free acid, such as peat earth; for, independently of its use in neutralizing a substance, which checks vegetation by its antiseptic properties, quick-lime may also disengage a portion of ammonia combined with this acid, and thus afford to the plant a more abundant supply of the nitrogen, which it requires.

"Chloride of calcium, common salt, sulphuric and muriatic acids, phosphate of lime and other salts, may, it would seem, on the principles laid down, be substituted, when gypsum cannot be obtained.

"The chlorides indeed, like certain oxides (such as water and carbonic acid), seem to be decomposed by the plant under the influence of light, for chlorine is exhaled by vegetables near the sea, as oxygen is in other situations. Hence, if muriate of ammonia should result from the action of common salt upon the carbonate of ammonia present in rain, it may undergo decomposition when absorbed by the plant, and contributes in consequence to supply it with nitrogen.

"The above consideration may suggest to us the utility in agriculture of ammonical compounds of all kinds, as substitutes for animal manure.

"Sal ammoniac is probably too expensive an article to be employed; but sulphate of ammonia may be had of the wholesale chemist at a price considerable more reasonable, namely, at £22 per ton; and the ammoniacal liquor, which is afforded in abundance by our gas manufactures, through the distillation of coal, is a still cheaper commodity.

"The latter consists principally of carbonate of ammonia, mixed with a certain proportion of the hydro-sulphuret, and, until its use in agriculture was discovered, much of it was allowed to run waste into the Thames, where its noxious qualities destroyed the fish, and rendered the water unpalatable and disgusting.

"Its efficacy as a manure is vouched for by many who have made trial of it upon their land; and although the hydro-sulphuret of ammonia in a concentrated form would doubtless be fatal to vegetation, yet in a proper state of dilution it may be of service to certain crops, not merely by virtue of the ammonia, but also in consequence of the sulphuretted hydrogen which it contains, since the latter is found to be an ingredient in the turnip, and in some other tribes of cruciferous plants.

"Where, however, it is found troublesome to preserve, or difficult to convey to a distance this volatile material, an easy method presents itself for retaining for any length of time the ammonia present in it.

"This is done, by availing ourselves of the same principle which has been already explained to you, in treating of the uses of gypsum as a manure; for as the gas liquor consists of ammonia, combined principally with carbonic acid, it is evident, that it may be converted into a sulphate by admixture with sulphate of lime.

"I am indebted to an excellent scientific chemist for the following details, which may be of use to the agriculturist in enabling him to appreciate the importance of this commodity, and to prepare for himself any quantity that he may require for his farm.

"One gallon of the ammonical liquor added to 1 lb. 2½ oz. of powdered, but not calcined gypsum, will produce 1 lb. of crystallize sulphate of ammonia. To effect the decomposition, the materials should be mixed and stirred up together for 10 or 12 hours, a heat below that of ebullition being at the same time employed. The sulphate of ammonia remains in solution, and may be obtained in a solid state, by evaporation at a low temperature.

"Theory would suggest, that this material ought to supply nitrogen to the crop at a much cheaper rate than the nitrates employed for that purpose. For let us suppose, that the farmer wishes to add to his land 60 lbs. of crystallize sulphate of ammonia; this may be obtained by introducing about 70 lbs. of powdered gypsum uncalcined into 50 gallons of ammonical liquor; for my informant found, that 1 gallon mixed with chloride of calcium yielded 4800 grs. of carbonate of lime, equivalent to about 7200 grs. of crystallized sulphate of ammonia, or 1 lb. 3 oz. Now 4800 grs. of carbonate of lime is equivalent to 8250 grs., or to 1 lb. 5 oz. of sulphate of lime, with 2 atoms of water.

"This, therefore, is the quantity of gypsum required to convert the contents of one gallon of gas liquor into sulphate of ammonia,

and accordingly 50 gallons will require 70 lbs. of gypsum, and will produce about 60 lb. of the ammonical sulphate.

"Now since the price per ton of gypsum is from £2 to £3, the cost of 70 lbs. of it cannot exceed 2s., and the labor of mixing the materials may be reckoned at about as much more; so that to a gas company, where this liquor, not being always for manufacturing any of the salts of ammonia, has hitherto been regarded as so much refuse, and where the heat requisite for evaporating and crystallizing the product can be obtained with scarcely any increased expenditure, the cost of the impure sulphate will not be one penny per pound.

"This then is less than half the cost of an equal quantity of nitrate of soda, which at its present price (23s. per cwt) may be reckoned at 2½d. a pound, and yet it may be shown, that a given weight of sulphate of ammonia contains more ammonia, and consequently ought to yield more nitrogen, than nitrate of soda.

Sulphate of ammonia 75 pts. contain of ammonia 17=nitrogen 14.
whilst
Nitrate of soda 86 pts.....17=.....14.

"So far as theory goes, therefore, the balance would seem to be in favour of the efficiency of sulphate of ammonia over nitrate of soda, in the proportion of 75 to 86.

"These considerations are merely offered, by way of encouragement to those who may be disposed to make trial of this promising kind of manure, and of course will go for little until they have been tested by experiment.

"There are other materials also employed as a manure, which appear to owe their efficacy to the presence of ammonia—such for example, as soot, which contains a considerable proportion of this principle united with carbonic acid, and which accordingly has for a long time been advantageously employed as a top-dressing to land.

"Lastly, the foregoing considerations point out the decided superiority of human to other sorts of animal manure.

"Independently of its being richer in most of those ingredients on which the fertilizing property of the manure depends, the following circumstance gives it an advantage.

"When the excrement of the horse or ox are employed, we are obliged to allow of their undergoing a long previous process of fermentation, by which a large proportion of this valuable matter is got rid of, in order as much as possible, to destroy the vitality of the seeds, which pass undigested along with the fæces; and after all many still remain, and are thus introduced into the fields when the manure is scattered over them.

"By the use of night-soil we avoid this inconvenience; and so it is, that in China, where it is exclusively employed, the corn-fields are remarkably exempt from weeds.

"Chemistry has suggested means for destroying those offensive qualities which have hitherto limited the use of this species of manure, although it is stated by Liebig, that the method adopted for that purpose on the Continent is defective, inasmuch as a large proportion of their ammonical contents is allowed to escape.

"Even under its present management, however, the process may be regarded as one of the most important presents which chemistry has yet made to the practical farmer, by rendering the accumulated filth of a large capital available for his purposes, in the remotest corner of the British empire."

IMPROVEMENT OF THE SOIL BY FALLOW CROPS, &c.

"The fallow time," says Liebig, "is that period of culture during which land is exposed to a progressive disintegration by means of the influence of the atmosphere, for the purpose of rendering a certain quantity of alkalies capable of being appropriated by plants."

By fallow crops is meant the raising of some crop on green sward while the turf is decaying, instead of allowing the land to remain a naked fallow during this process.

The object then of fallows, is to procure the decay of vegetable matters, and the abstraction of alkalies from the mineral portions of the soil.

Naked fallows accomplish both of these objects, and have been long practiced both in this country and in England. The practice with us has been to plough up grass lands in June or July, and after cross-ploughing and harrowing, to sow with winter grain in September or October. In England the land was formerly ploughed in the fall, and worked over during the following summer. In both cases one crop is lost; but though naked fallows answer the intended purpose tolerably well, they are now abandoned by every intelligent farmer on both sides of the water; with the exception perhaps of wet stiff clays, which are ameliorated by exposing the naked furrows to the frosts of winter. The evils of the system are more than equivalent to the benefits. The labor is much increased, one crop is lost, and the vegetable matters are dissipated, by their exposure to the air during the process of working the land.

Fallow crops, on the other hand, avoid these evils, and secure greater benefit both to the soil and the crop.

Process.—To prepare the soil for a fallow crop, all that is needed is to plough the green sward and roll it down; then, after harrowing thoroughly, the seed should be sown upon the inverted furrows, either in the spring or fall. If the land is stiff and wet, the autumn is preferable; if light and dry, the spring is the best season.

The *utility* of fallow crops, instead of naked fallows, may be shown by reference to the influence of growing vegetables upon

the soil. The elimination of alkalies and decay of vegetable matter, are, as we have said, the only objects of fallows.

It may easily be shown, that both of these ends are much better attained by tilling the fallow land; for,

1. The alkalies are furnished in greater abundance by this process. It matters not whether the land is covered by woods, or with some crop which will take up but few alkalies, such as potash and phosphates. Now it is found that several leguminous plants will grow upon a soil, and will abstract from it but a minute portion of alkalies. The "Windsor bean *(vicia faba)* contains no free alkalies, and only one per cent. of the phosphates of lime and magnesia." *(Einhof.* "The kidney bean *(phaseolus vulgaris)* contains only traces of salts." *(Braconnot.)* "The stem of lucern *(medicago sativa)* contains only 0.83 per cent., that of the lentil *ervum lens)* only 0,57 of phosphate of lime with albumen." *(Crome.)* "Buckwheat, dried in the sun, yields only 0.681 per cent of ashes, of which 0.09 parts are soluble salts." *(Liebig.)* Hence these plants and with others, have been called fallow crops. It will be perceived that the alkalies which the oxygen and carbonic acid of the air are eliminating from the soil, will be increased in this case, because the roots of the crop will permit these agents to act with greater power.

The power growing plants to decompose the rocks, and to eliminate alkalies, has already been frequently referred to; and as but a small quantity of alkali is removed by the fallow crop, the amount in the soil is, upon the whole, increased.

2. It is further evident, that the roots leave in the soil *nearly* as much vegetable matter as is carried away in the stalks and grain. This deficiency is made up by the influence of growing plants upon the humus of the soil. There is little doubt, but that decay proceeds much more rapidly when the soil is tilled, than when it is not; and the reason is, the galvanic agency of the roots and the facility which they offer for the introduction of air and water, by loosening the soil, tend powerfully to hasten the decay of humus, or to convert the vegetable matters into vegetable food. The fermentation of the sod will be more complete when it is turned in deep; and the gaseous products will be retained by the superincumbent earth; hence we may draw an argument for deep ploughing, and for letting the sod remain until it has completely passed through the fermenting process.

Turning in Green Crops.—The turning in of green crops, has long been a reputed source of rendering barren soils fertile. It is well suited to any soil which requires either to be rendered lighter, or to be filled with vegetable matter and salts. Light sandy soils, such as pine barrens and loams which have been exhausted by a long course of cropping without manuring, are most benefited, while stiff clays are rendered much warmer and more friable.

Processes.—1. Green crops may be sown for the purpose and turned in, either before the seed ripens (in which case two crops may be turned in the same season,) or after the crop is nearly ripe. In the first case, before the ripening of the seed, the plant derives most of its substance from the atmosphere; but when the seeds are maturing, it draws directly upon the matters in the soil. Some experiments have been made to decide which course is best, and they incline to the dry crop. If but one crop is to be added to the soil, this would be the best process, because it adds a greater amount of salts and humus; but two green crops are better than one dry crop. Buckwheat and oats answer well for this purpose.

2. But the better course is to save the crop by sowing clover with other grain, and the next spring turn it in; and having rolled it down, plant directly upon the furrows with potatoes and corn. The surface then should be tilled with the cultivator or hoe, so as not to disturb the sod. Some recommend, in this case, to spread a light covering of compost manure, lest the soil should be too much exhausted by the crop.

Now it is found that the quantity of vegetable matters added to the soil by this process, will exceed 12 tons to the acre. Elias Phinney, Esq., of Lexington, has actually weighed the vegetable matter in a cubic foot of green sod, from which he made an estimate that one acre contained more than 13 tons!

The best time for turning in green crops, or breaking up greensward (unless the soil is a stiff clay,) is the spring and early part of summer; because the sod will become rotted before winter, and will not afford, as it otherwise might, a shelter for worms, during that season, ready to injure the succeeding crop.

Theory.—The theory of this process is exceedingly simple. It is evident that what is taken from the soil must be returned to it, or the land will be impoverished. We have seen that salts and geine are removed. This process simply restores them.

1. The green crop being buried deeply in the ground, soon begins to ferment and decay; a large quantity of organic food is thus added to the soil. But humus or geine is not the only substance required by plants. They must have alkalies.

2. These are supplied in part by the influence of the atmosphere, the ordinary process of disintegration. But this is trifling compared with

3. The galvanic effects of the living plant. The agency of growing plants has hitherto been overlooked in this connection. As the roots form a galvanic battery with the soil, they become the most powerful decomposing agents. Now we know that the poorest soils (the pine barrens) contain a large quantity of alkalies, potash, lime, etc. locked up in the rocks. These are drawn into the organs of plants, where, as soon as covered with earth, they exist in a fit state to nourish future crops. If then, we can make a plant grow at all upon such soils, we can render them fertile by turning in green

crops, and thus furnishing the requisite amount of geine, alkalies and salts. If the soil is too barren to produce plants, a small coating of ashes will give a start to the green crop, and then the soil may soon be rendered fertile.

In case of clayey soils, the turning in of green crops not only restores what is exhausted by tillage, but renders the texture much better fitted for the roots of plants, and the soil itself a better retainer of heat.

In case of dry, gravelly soils, the additional vegetable matter gives the power of absorbing moisture and equalizing the heat; hence, it protects the plant from the extremes of dry and wet seasons.

The importance of this mode of improvement is not fully felt by our farmers. By sowing a few pounds of clover seed with his grain crops, the farmer may be constantly augmenting the fertility of his soil without the loss of a single crop; and even if his lands rest a year, and all their produce is given back to them, they will more than return it in a few years, by the larger quantity and better quality of their productions.

It will be seen that fallow crops and the turning in of green crops, are somewhat similar in their influence upon the soil. The object in both cases is to obtain alkalies of salts and geine. Fallow crops yield mostly the former, green crops principally the latter; and by both processes taken together, a soil may be rendered very fertile, without the addition of manures; especially for crops not requiring much nitrogen.

[*Gray's Scientific and Practical Agriculture.*

PEAS AS A PREPRATION FOR COTTON.

Messrs. Editors:—Having seen in a former number of your valuable paper a request that persons *conceiving* they possessed some improved method of culture or other farm work, would let themselves be heard through the medium of your paper, and having a strong desire to see how I would look in print, I am induced in my plain way to suggest what I consider of very great importance to the cotton planter.

In a wet season, one of the greatest difficulties the cotton grower has to contend with in old and rich soils is the spontaneous and rapid growth of crab grass. This is not only a serious evil to the growing crop, but it extends its malign presence and influence to and during the picking season; rendering it infinitely more unpleasant and unhealthy to the hands by the heavy dews it retains, until a late hour of the day. "An ounce of prevention is worth a pound of cure." Now, although I do not know how this *mathematical* axiom was first introduced, or on what data the calculation was made, to arrive at such a rational conclusion, I have as much

faith in the assumption, as that "a stitch in time will save nine;" which I *know* to be demonstrable according to "Pike," "Gough," and others of ancient reverence, and if it cannot be proved by those of the present degenerate age, why I should not give a fig for the whole of them. Now Messrs. for fear you will be getting tired by such irrevelant matter, I will endeavor to approximate as near as I can, to what I *do* want to say.

You must know then that I have great faith in a Pea crop; and in my limited experience, I have, I think, arrived at one fact which by being pursued in the way of rotation as it should be, I have no doubt will lessen the cotton planter's labor in working his crop at least fifty per cent. Now it is not my intention to inflict on you and your readers a long article, but if this is well received, no one may know, for the future, what you may have to suffer. I write this article *now*, that *all* may have time to profit by it for the cotton crop of next year.

Do not sow your Peas in your corn field—it is a bad plan. Sow them in your rye or oat stubble as soon after you get your crop off the ground as possible—*with at least three pecks to an acre of the greatest running peas, or one bushel or more if of the black or others that run but little.* I prefer sowing them in drills about 2 to 2½ feet apart, dropping two or three peas in a place, when the vines are to be gathered; which should be done before the frost catches them. Sown broadcast when to be fed on the ground is fully as good a plan. The best method of curing them, is to let them get somewhat wilted, not particular how much, so that the leaves are not dried enough to drop off; then throw them into moderate sized cocks in the field, and let them stand until sufficiently cured, which will require several days—even if the weather should be fine—but be not alarmed at rain falling on them. There can be no superior food for stock in any country, and is withal a cheap one. When to be stacked away, the most approved method is to mix alternate layers of dry straw of some description, and a liberal use of salt will not be amiss. This renders the otherwise useless straw nearly as valuable as the pea fodder, and *ensures the keeping of the latter.*

But this is all digression: I only wanted to say, that I sowed last year in a very grassy piece of ground about three pecks of the "Crowder" peas to the acre, and that this year there is not a spear of crab grass to be seen. They completely matted the ground and have smothered out every vestige of the grass. No land could have been in finer condition for a cotton crop this spring in consequence. The pea crop was worth to *me* at the rate of at least $20 per acre, estimating corn to be worth 50 cents per bushel. I do not think that the pea is proportionate to the increased quantity of vine, but the hay that can be made from them, vastly counterbalance any deficiency in that respect. The objection may be made

that no one would want to sow as many peas as would prepare his entire cotton ground; if so, sow all you can. But I wonder if it would not be better to plant less cotton and more peas, and feed and keep well more good cows, horses, mules, oxen and prepare more old Ned. *Edward* is *particularly* fond of a dish of peas. Now please just ask that ciphering man who ciphered out the division of the Berkshire pigs, whether he can't cipher out something about the profits of the amplification of quantities.

Well, I don't want to tire you, so farewell. PEA VINES.

——— *County*, ——, *May*, 1842.

Another writer in the same number adds: "I wish to make a simple suggestion in relation to planting peas. I have tried an experiment this season, which I think is the best mode of planting. Most of farmers neglect planting peas until they give their corn the last ploughing; which, in my humble opinion, is too late. When I gave my corn the third ploughing, I planted my peas in hills between the corn hills, (as I planted all of my corn checkered and shall continue to do so.) Then, the next ploughing, I planted every other row broad cast, which will make me a splendid pasture of green peas for my stock. The peas I planted in hills will afford me a plentiful crop of seed peas, which will have time to mature and get perfectly dry before I need the pasture for my stock.

[*South Western Farmer.*

CULTIVATION OF CORN.

We copy the following article from the *Albany Cultivator*. The reasoning against plowing deep among corn, and against hilling up after the corn begins to spindle, seems to us strong and conclusive. But deep stirring of the soil between the rows while the corn is small, gives vigor and strength to its growth. We could never have the good fortune to stop the growth of weeds by having the corn so thick as to shade the ground. Ours are so tenacious of life that they chose to live without sunshine, rather than not live at all:—at least some of them so chose. We however can destroy them mostly by *scratching the surface* with a very light harrow and with the hoe:—

"I have noticed an error in the culture of plants and trees wherever I have been, and I know no better plan to illustrate it than in showing the effect of the error on corn. In the culture of corn, it is usual to work the crop till the tassel as about to make its appearance: this is an error. When ever the lateral roots of a plant are injured, moved or disturbed, when the stock that is to produce the seed is matured or about maturing, or whenever those roots are covered to a greater depth at this stage of growth than nature intended, it will produce early maturity and decay, and the yield will be just in the proportion of the extent of the error. If

you will take the pains to destroy the lateral roots of a stalk of corn after its having made the last joint on the stock, you will find that it will produce no corn; and if you will displace their situation at this time by hilling, you will get a less quantity of seed than if left alone. If the lateral roots of a stalk of clover are cut off when the seed stock is forming, there will be no seed; and just so with other plants and trees; and the working of them at this stage cannot be attempted without injury. Yet, strange to say, it is almost invariably done. I have never suffered my corn to be worked after one third of the height of the stalk was attained. I plant close enough to have the corn to shade the ground at its height, so as to prevent the growth of weeds after this last working. I plant two and a half feet square, and leave two stalks in the hill, and I have never missed having as much corn per acre and as large ears as my neighbors: and much more than some of them. I never planted a crop of corn that I had not some kind neighbor or friend to tell me that I would have neither corn nor fodder. Last spring, a cropper upon my neighbor's farm planted thirty-five or forty acres in corn, and I about ten acres—our fields adjoining. He planted his corn four feet square, and left three or four stalks in the hill, and worked his crop till it was ready to shoot into tassels. I quit working mine when about two and a half feet high. His field was full of weeds snd grass. Mine remained clear of both weeds and grass. When our corn was husked and housed, he told me I had from my ten acres nearly fifty bushels of corn more than he had from his thirty-five or forty acres, notwithstanding he told me in its early growth, that I would have no corn. Part of his ground was quite as good as mine.

"A similar and worse effect is produced in the hilling or working of plants in the latter stage of their growth, than takes place in plants and trees when deep planted. A disease is produced that hurries the plant on to early maturity by impeding the proper nourishment, by disturbing or placing the roots below where nature intended they should range for food, as well as depriving the vessels of the stalks thus covered from performing their functions. The stalks being established, it is folly for man to attempt to do that which God alone can do. Deep planting and ploughing the peach orchard, after the trees have attained sufficient maturity to produce fruit, is, if not wholly, the *principle* cause of the disease called the yellows. By ploughing, the lateral roots are either cut, disturbed, or forced to seek food apart from where nature intended, and thus operates as a hill placed around plants, and brings the tree to early decay.

To conclude this subject for the present, I will say, work your plants and trees while young, so as to form good stalks, and then trust to the all-wise Disposer of events to perfect them.

I think I noticed a remark in your paper, of the roots of the water-melon being attacked by small animalculæ. Some salt added

to the hills before planting, will remedy the evil and give you better fruit; and salt and saltpetre sown in the peach orchard (particularly where the orchard is worked with the plough,) will assist in preventing like depredations the roots of the peach tree.

"If you think that this hasty notice will be of any service, you are at liberty to dispose of it as you think best, and be assured that I seek neither money nor thanks for performing duties we owe one to another. LITTLETON PHYSIC.

RAISING CORN FOR FODDER.

We have been kindly favoured by the Hon. Henry L. Ellsworth with several pamphlets of great interest. From one, containing his correspondence with several of the most experienced and celebrated agriculturists of the Union, we make the following extract respecting raising corn for fodder. It is from his letter to Elizur Goodrich of Con.

"Permit me to mention an experiment made by myself at Washington, on the subject of fodder. Noticing the statement made in the French periodicals, that the stalks of corn (maize) contained one-half as much saccharine matter as cane, and knowing that my ancestors made their molasses during the revolutionary war from these stalks, I sowed four and a half bushels of common corn, broad cast, and harrowed in the same; this labor was easily performed by a single man with a team (including the ploughing) in a day. Having soaked the corn in salt petre water, it took a rapid start, over-topped the weeds, and covered the ground with a forest of stalks. When fairly tasselled, I cut the same, which I fed to cattle, horses and hogs, both green and dry. I fed to swine after being cured, it was cut and fermented with chop or bran. Being anxious to ascertain the quantity, I measured a few square feet of the stoutest. I found I had 5 lbs. of green fodder per square foot; this may not seem incredible, and it is probably less than what would grow in rich lands at the West; if, however, we consider there are 43,560 square feet in an acre, we shall obtain 217,800 lbs., equal to 108 1-2 tons of green fodder!

"I cut the first crop the early part of July, and ploughed and sowed the same land again, and took a second crop two-thirds as large, and even tried a third on the same land, but it did not reach over ten inches before the frost seized it. Persons who have only a small patch of ground may try this experiment to advantage, and fill their barns with fodder.

"In curing stalks, it is recommended to place the small end upon the ground, with the butts upward, to guard against the absorption of moisture from the wet ground. Whoever will try the experiment of cutting flowers, and putting some on damp flannel, or into water, and hanging up others in the sun, will see

the advantage of curing fodder in the way I have mentioned. Should any fear the stalks would not stand upon the small end, a few rows could be left to support the remainder.

"I did not intend to have said so much on this point, but a new setler, who begins clearing his field in the spring, may be glad to know how he may supply himself with any quantity of fodder, by sowing corn as late as midsummer."

Would it not be a good notion for our planters to put their oat and rye fields, which generally lie idle after the crop is cut off, in corn sown broad-cast in this manner? We do not doubt but that two crops of fodder could be raised with us after oats are cut, before frost would nip the plants. The amount of food yielded by the crop is astonishing and unequalled we believe by any other. From this cause we would suppose it to exhaust land rapidly, which should be prevented by rotation and manure.

SWEET POTATOES.

A valuable correspondent of the Southron, signing himself "Agriculture," has some suggestions in relation to the cultivation of the sweet potato, which we think important. He expresses the same opinion we have always entertained and have already given in the Farmer—that this common and little noticed root is more valuable to us than all the ruta baga, mangel wortzels, sugar beets &c., which could be grown among us. He considers the common method of planting wrong, for the following reasons:

1st. In consequence of hilling or ridging, you must necessarily to procure earth sufficient, plant too far apart to yield as large a crop as the ground will sustain.

2d. By ridging or hilling, you expose so much more surface to the action of the winds and sun, and of a consequence the evaporation is injuriously increased, especially in a dry season.

3d. In consequence of being so planted at such a distance, the vines do not cover the earth soon enough to prevent much evaporation and the injurious effects of the summer's sun to the soil.

4th. There is necessarily much labour to prepare the hills or ridges, and to subsequently keep the crop clean.

To obviate these objections, I propose—

1st. Instead of ridging or hilling, to plough the ground as deep as it can be done with a large plough, say eight to ten inches deep, according to the kind of potatoes to be planted. After being thus *well* broken up, proceed with a heavy harrow and give it a thorough pulverization, which will prepare the ground for either root or slips. It may be advisable to plant both. I have always found the latter to produce the best crop, when planted in time. A fine level surface being thus prepared, you are enabled to put in your seed or slips much closer than is the usual custom. I would recommend

about two feet between the rows, and planted about the usual distance apart in them. For striking out, I would use either the shovel or single coulter.

2d. The advantages would be especially perceptible in a dry time, and no objection could be raised at any, in consequence of wet, as all prudent farmers would of course, at all times, select a moderately dry soil for the crop.

3d. As the vines would have only half the distance to run before covering the ground, so they would, in a corresponding degree, sooner give the protection to the soil, prevent evaporation and the deleterious effects of exposure to the sun's rays.

4th. One of the greatest advantages in thus putting in the crop, and second only to the increased quantity of production, is the rapidity with which the ground can be prepared and subsequently worked; thereby enabling the hand to attend to an increased quantity of ground, or to devote their labor to some other purpose. I beleive that one good dressing with the hoe between the plants, and one with the cultivator between the rows, would be ample working for nine tenths of the crops raised; and instead of the tedious operation of scraping with the hoe, and barring off and shearing up with the plough after the crop is in, (to say nothing of the great amount of labor in preparing the hills or ridges,) we substitute a better, more rapid, and less laborious operation.

In gathering, the plough would again be the principle implement. By running the bar on each side, you are prepared to throw out the main body with the third furrow. It would be unnecessary to gather closer than you wish for quantity, for the hogs will do that to *your* profit and to the enjoyment of their epicurian tastes.

Your old friend, AGRICULTURE.

ASHES ON COTTON.

We make the following extract from a letter received from S. W. Cole, Esq. of Wadesboro, North Carolina.

"This County, (Anson,) is a fine farming section, and is the only country in the state well adapted to the raising of cotton. Here we raise a large quantity for this section of the union, and our planters are devoting more care to the improvement of their plantations. The best manure we have for cotton is ashes. My mode of putting it on is this; I run a scutter furrow, then from a basket or box scatter about 35 bushels per acre in the furrow thus opened, and then with a dagon make the cotton ridge. I tried ashes and cotton seed as a manure last year, in the same field, and used the quantity of each. The ashes made far the best cotton; it took an early start, looked green and fresh, whilst that planted on the ground manured with cotton seed, looked yellow a long time, and never recovered the check it received at first coming up.

[*Cultivator.*

HORTICULTURE.

THE KITCHEN GARDEN.

[As mentioned in our first note, we re-publish this small work entire, and without alterations of any kind, but it will be borne in mind by our readers, that these directions are intended for the climate of England, which is cooler and moister than ours in summer and colder in winter, which necessarily occasions a change in the times of sowing and cultivating certain vegetables such as turnips cabbages, &c. The season for performing these operations also vary, and we refer our readers to the calender published in th last volume of the Agriculturist for particular directions as to time, and we will only observe, that as a general rule, the spring operations should be performed in a month earlier, and the fall, a month later, than indicated in this work, that being about the difference in our climate.—Ed. So. Ag.]

THE KITCHEN GARDEN:

A hand-book for Cultivators, containing full directions for the profitable culture of all kinds of culinary Vegetables. By James Main, A L. S., author of "Flowers," and "Fruit Trees."

(Continued from page 321.)

CULTIVATION OF ESCULENT FLOWERS.

The unexpandid flowers of some plants are among the chiefest of our dietary vegetables; particularly the two excellent varieties of the cabbage; namely, the cauliflower and the different sorts of brocoli.

The cauliflower, from all accounts, was originated in Italy; and with us is rather a delicate plant. The principle summer crop is raised from seed sown between the 22d and 26th of August. If sown only a few days before the first mentioned date, the plants are apt to show flower before they get to full size; and if sown later than the last date, they do not come into use as soon as they are wanted; that is about the second week in May.

The seed is sprinkled regularly on a rich dry-lying spot; and when the seedlings appear they must be defended from birds, slugs, &c. About the 20th of October, the strongest of the plants should be raised carefully, and transplanted into three-feet beds on a south border, for the convenience of hooping over and covering in severe weather. Here they must not stand too closely—be kept free from weeds and decayed leaves, and attention paid that no slugs or snails harbor among them.

When all danger from frost and March winds is over, the plants may be transferred to where they are intended to produce their flowers. They should be taken up with good balls of earth, and re-planted in shallow trenches of very rich ground and well watered with manured water. They should stand in rows, that is, the trenches made for them should be two and a half or three feet asunder, and at two feet apart in the rows. The after management

is deeply hoeing between the rows—watering if necessary—and drawing earth to the stems.

But the earliest portion of the crop are nursed under hand-glasses. In every well-found garden there always is or should be a set of two or three dozen hand-glasses. These are used as cauliflowers in winter, and for the culture of cucumbers, melons, &c., in summer. When used for cauliflowers, a bed or border is prepared by manuring and deep digging about the 10th of October; along the middle of this the glasses are set by line, three feet from each other; within each glass three or five of the strongest plants are set, and watered if necessary; the south side of the glass is raised on a brick-bat at all times in fine weather, and let down on cold nights, or when the weather is frosty.

The glasses are kept over the plants until they become too crowded within them. When this happens or rather before it happens, part of the plant are carefully removed to other sheltered stations (commonly into the alleys between asparagus beds) and those that remain are well earthed up, and the glasses raised on brick-bats to give constant air and room to the enlarged heads. Soon after this the glasses are entirely removed.

There is another scheme for expediting the flowering of cauliflowers which is often practiced sccessfully. It is this;—soon as the cauliflower seedlings are large enough to handle in September, a dozen or two are potted in rich compost in the smallest size or thumb-pots; these are plunged in a cold frame as near the glass as may be done. Here they are allowed air daily by tilting the light behind, but shutting close on nights; water may also be given occasionally. Soon as the small pots are full of roots, the plants must be shifted into pots a size larger; and then into a size larger still, say into thirty-twos; afterwards the plants go into twenty fours; and ultimately into sixteens. This last shifting will probably happen about the beginning of April, and in a few days afterwards the plants are removed to the front flue of a vinery or peach-house, there to have a fortnight's excitement before they are put into the open air. While in pots in the frame the roots must never be allowed to get too much matter around the sides, nor be allowed even to get dry, and especially while in the hot house, to prevent which the pots should be set in pans of manured water; for if suffered even to get quite dry they "*button*" instantly.

About the 20th of April, the pots may be taken out and deeply plunged (to allow of them being well earthed up) on a warm sheltered border, or in the alleys between asparagus beds. If the weather should happen to be cold, windy, and dry about this time, the plants should be screened with branches of ever-green trees, or other protection for a few days.

Cauliflower plants treated in this way present their flowers before all others, sometimes as early as the 6th of May, especially if

the previous season has been favourable, and the requisite care has been bestowed in bringing the plants forward.

In the ordinary way of preserving the plants through the winter either planted in cold frames, or in beds hooped for mats, we often err in allowing them every glimpse of sunshine in severe frosty weather, when, no doubt, they would be safer if even shaded from the sun; because the alternating frost and thawing, is decidedly prejudicial.

A succession of cauliflowers throughout the summer and autumn is desirable: they are obtained by making a series of seed-beds; that is to say, a second in September, a third in February, both under glasses; and a fourth in the beginning of May, which last yield flowers in October and November. The beauty and closeness of the heads of first crops are preserved by a few of the leaves being broken down over them as a shade from the sun. And it almost always happens that winter sets in before the Michaelmas crop are all used; in which case, the flowers which are fit for use should be pulled and hung up by the heels in a dry warm shed; or stripped of the points of their leaves, and placed close together in a bed of dry earth in a large frame or pit where they will keep good for a month or two.

There are several varieties of cauliflower; but the early, late, and London particular varieties are mostly cultivated. They are all fond of, and attain to the largest size in the richest ground.

Cauliflower seed is always saved from the earliest and most perfect flowers; some flowers are remarkably white and compact, others are loose or what is called "frothy" in texture; the latter are rejected for breeders. When the flower is progressing towards bloom, the centre of the head is usually cut out, as the lateral branches are found to yield better seed than the central branches.

Of Broccoli, *(Brassica oleracea botrytes.)*—This variety of cabbage is nearly allied to cauliflower, as having a similar habit and of similar qualities, though not quite so delicate in flavour, but somewhat more hardy. There are a certain number of old varieties which have been long in cultivation; such as the early purple, the white or cauliflower broccoli, and the late purple. But we now have another tribe, called "Cape broccoli," which are an excellent addition to our old sorts, and by which the season of this esteemed vegetable is greatly extended.

All the old sorts are sown about the 20th of April; pricked out into one, sometimes two nursery-beds, before they are set out for good in open compartments about the beginning or any time in July.

The seed, and nursing beds, as well as the soil of their final stations should be of the richest description; as the heads are larger or smaller according to the rich fertility of the ground on which they are produced.

Some of the sorts are dwarfish; they are allowed thirty inch distances between the rows, and twenty-inch spaces between plant and plant; the larger growing varieties are placed three feet apart between the rows, and thirty-inch spaces between the plants in line. Full and free air and light render each plant more stocky; and consequently keep them safer from severe weather, and cause them to yield larger flowers.

The Cape varieties produce their flowers sooner than the old sorts, sometimes in little more than three months from the seed. It is well to sow at different periods during March, April, May, and June. The seedlings require no pricking out on nursery beds; but are transferred at once from *the seed-bed* to the open quarters, where they stand to produce their flowers. Repeated removals are found to be hurtful, at least not necessary for the Cape varieties, and some practitioners have been very successful by sowing on drills, where they are intended to stand to flower; the plants being thinned out to due distances, and kept well hoed among and earthed up. This mangement, it seems, brings the plants sooner into flower.

As broccoli crops are liable to be killed by severe frost, especially if the plants have risen high from the ground; it is a safe plan to lay the plants down in October or November; which often saves them, when, if left upright, they would probably suffer before they produced their flowers.

OF THE ARTICHOKE *(Cynara Scolymus.)*—It is only parts of the full grown flower; namely, the bases of the sepals of the calyx, and fleshy receptacle which are eaten. The bottoms are also dried for other purposes of cookery, and the young flower-buds are shreded into salads, or dressed in various forms as table dishes.

As the artichoke is a rampant grower, and as a plantation lasts for several years, the ground intended for the plants should be well prepared. It should be liberally manured, and trenched, and when laid in form, the young plants are dibbed in rows five or six feet asunder, and with three feet intervals from plant to plant.

The sets soon take to their new place, and grow luxuriantly, yielding small but useful heads in the autumn. The artichoke is impatient of hard frost; and, therefore, about the beginning of November the plants receive what is called the winter dressing, which is performed thus:—a few of the largest dangling leaves and remains of the stems are first trimmed off, and each plant is surrounded by a thick wreath of dry dung litter; and in digging the ground between the rows, the broken mould is worked towards and over the litter, so that the plants with a few of the central leaves only appearing will stand on an elevated ridge, which will at once throw off rain, and its additional thickness over the roots defends them from frost.

Thus the plants remain till the beginning of April, when they receive their spring dressing. This is done by digging away the

extra earth and litter over the stools, and laying the actual roots nearly bare, in order to see the state of each plant. These will be found to consist of from five to ten shoots rising from the crown of the roots, the central being the strongest. Of these last, three or four, according to the strength of the stool, are reserved to produce heads in the summer; the weaker shoots at the outsides are supernumerary, and must be slipped off to form new plantations, or to be thrown away.

When every stool has been examined and reduced, the whole plot of ground occupied by the plants is digged, and on which double rows of any low growing crop may be sown or planted between the ranks of the artichokes.

There are two sorts of artichokes; namely, the large green, and the purple globe. The first is the largest; but the last is most esteemed and most generally cultivated. During the growth the principal head may be increased in size, by cutting off the inferior or side branches, which are produced on the lower part of the stem; and when the heads are gathered for use, they should be broken or twisted, not cut, off the stem; for by twisting off many of the strong fibres which run into the bottom are drawn out, and which a knife would leave behind. As soon as the heads are gathered, the stem should be broken or cut down close to the ground, which is done to encourage the shoots for the next year.

As plantations of artichokes are apt to become irregular in line after a few years, it is a good plan to plant an additional row every year, not only for having young heads in the autumn, but for keeping up a succession of the most vigorous stools. The oldest rows may be thrown out to admit other crops, as the younger ones come into bearing.

The only other flower which can be called dietatic is that of the Indian cress *(Tropæolum)*, which is used sometimes as an ingredient in salads, for the sake of their fine acid flavour.

CULTIVATION OF ESCULENT PODS, SEEDS, &c.

Having described the roots, stems, leaves, and flowers of plants cultivated in every kitchen-garden, we have now to treat of the pods and seeds which are also culinary. Of the former the following are the chief:

Kidney Beans *(Phaseolus multiflorus)*.—This is commonly called the scarlet runner, from the colour of the flower, and climbing property of its stem. From its branching habit, and productiveness of pods, and its continuing fruitful until the frost kills the plant, it is one of the most profitable of our garden products; more especially as the more the first or oldest pods are gathered the more abundant are the flowers and pods which follow. It is a tropical plant, and consequently is most impatient of frost, the least degree of it being fatal to the runner.

It is on this account that a dry warm soil is most suitable, and that the seed should not be put in the ground till it is warmed by the sun of May. They are often sown earlier; say about the 20th of April; but this is always risking the crop, because a slight night frost in May will destroy the whole. But the earlier the seed vegetates, the sooner will the crop come into use; and, therefore, it is a good plan to sow about the middle of April in boxes thickly, to be brought forward under glass and be transplanted into the open ground about the 20th day of May, a little sooner or later. By this method the first stage of their life is passed in safety, and the slight check they receive by the removal, tends to throw them into flower sooner, and moreover renders them much more fertile afterwards.

Whether sown or transplanted in the open ground, the rows or drills should be four feet asunder; the seeds may be dibbed zigzag on each side of a stretched line five inches apart, or so disposed in a wide drill about one and a half inches deep, and carefully covered with a rake. When the plants rise they must be protected against slugs, the ground kept loose about them, and be earthed up as high as the first leaves. They require rods to climb upon six feet high; and these should be placed as soon as the twining stems arise. When rods are not to be conveniently had, branches four or five feet high stuck along the rows may be substituted, and when the runners surmount these, they (the runners) should be repeatedly stopped, which will cause the stems to put forth numerous branches, which become exceedingly fertile of pods.

While the plants are in high health and full bearing, they may be continued fruitful for a long period by a little management, and that is to gather all the largest pods whether they may be wanted for use or not, because if the first pods be allowed to ripen seed, the latest flowers become sterile. And in dry seasons the plants require to be copiously watered at the root, otherwise the topmost flowers will certainly fail.

Two sowings of this plant are generally considered enough to ensure a full supply for an ordinary family establishment, the first in May and a second sowing about the end of June, which, with favourable weather, will bear till the plants are destroyed by frost. The extent of these sowings, however, must depend on the demand of the family.

There are two varieties of the scarlet runner, namely, the large white, and Dutch white flowered, and the new one with variegated flowers; but the scarlet is most to be depended upon for usefulness. The climbing character of the runners, their beautiful flowers and the freedom with which they grow on any kind of support, saying nothing of their great productiveness, render the runner kidney bean one of the most desirable of culinary vegetables.

When seed is to be saved, a few plants of the first sowing are allowed to perfect their first pods, which, when they become hard

and dry may be gathered and stored either in the pods or otherwise in a dry place.

Dwarf Kidney Bean, *(Phaseolus vulgaris)*—Differs from the runner in having a dwarf habit and with but little tendency to climb. There are many varieties, but of them, the speckled, negro, Canterbury, or Battersea, are the principal cultivated sorts, either in the open ground or for forcing.

Like the runners they require a light rich warm soil, and for the first crops especially a south border is usually chosen for them, whether sowed or transplanted. Drills two and a half feet apart are drawn about an inch deep across the border; in these the seeds are dropped two inches asunder and covered up. This may be done about the 20th of April, and succession crops put in every ten days afterwards, till the end of July. The soil should be kept loose among them by the hoe, and occasionally have earth drawn to their stems. The flowers and pods are numerous, and the oldest should be frequently gathered as well to encourage the later flowers, as to prevent them becoming too tough for the table.

The pods while tender are a favourite table vegetable, and are also a favourite pickle, for which last purpose great quantities are required every year.

This bean is forced in several ways, either on dung hot-beds or raised in twenty-four sized pots, to be fruited in vineries, peach houses, or any other pit or house where there is room on the front and end flues of the forcing house.

Forcing in pots is generally begun as soon as fire is put to the house, whether that be in December, January, or February; the requisite number of pots are rather than better half filled with mellow rich compost; three or four good seeds are placed equidistantly round the outside, pressed into the mould about an inch deep. When the plants rise above the rim of the pots, they are earthed up by nearly filling up the pots with fresh dry compost. The pots should not be placed in too close contact with the flues, and be duly supplied with water both at the root and over the leaves, to prevent the attack of the red acarus, to which these plants are particularly subject in a dry heat. With sufficient heat, air, and light, the plants are soon productive, and bear plentifully in March and April.

Some gardens are at much pains in bringing forward this acceptable vegetable; they sow in small pots in October or beginning of November, and keep them rather dry and in a low temperature in any place safe from frost, and where at the same time they have full light. When the forcing house which the plants are intended to go into is in full heat, they are shifted from the small to the full sized pots, and take their final stations in the house. This additional scope for their roots, and extra excitement from higher temperature brings them rapidly into flower and full bearing, in consequence of their previous state of non-excitement; it being a

general consequence to all plants that if stunted or starved in the first stage of their existence, are invariably more precocious than such as has been pampered in their youth.

Succession crops are brought forward in the same way, and even up to the time they may be put out for good in the open air.

Dwarf beans are successfully raised on hot-beds. These are intended to succeed the hot-house crops, and to precede those sown in the open air. A moderate hot-bed of well-prepared stable dung is made about the beginning of February, and a frame of two or three lights set on. The dung is covered with a layer of good light mould about six or seven inches thick; on this the seed is dibbed in cross rows fifteen inches apart, and the seeds three inches from each other in rows. The plants soon appear, and must have sufficient fresh air to prevent their being too much drawn. When four inches high, the plants must be earthed up by an additional layer of compost as high as their lower leaves, and if the centre shoot has a tendency to rise, it should be stopped to cause the production of branches. The plants should be occasionally refreshed with sprinklings of water, have as much air as can be given with safety, and covered with mats on nights. The plants bear abundantly if the bottom heat do not suddenly decline, they always requiring a full share of summer heat, and this should be afforded either by linings of fresh dung or by extra coverings.

SUGAR PEA *(Pisum saccharatum.)*—This variety of pea is only remarkable for its being devoid of that thin tough film which lines the pods of most other sorts; hence, the pods as well as the embryo seeds can be boiled and eaten like the young pods of kidney beans. This sort of pea, however, is not much cultivated, and is considered more as a curiosity than a useful plant.

The capsules or seed-pods of the radish are seen in the epergne on every genteel table, as a pickle, and as such, they serve to eke out this description of condiments to human food. These pods are easily obtained, by allowing half a dozen of the first crop of radishes to stand to produce their seed pods.

Another capsule or pod is the capsicum or cayenne pepper indispensable in cookery as a spice, a pickle, or a preserve, is frequently raised in gardens for family use. The seed is sown in pots or pans in March or April, and placed in a hot-bed. When large enough to handle, the seedlings are potted in small pots, and nursed in a hot-bed till about the 20th of May, when they are planted out at fourteen-inch distances on a warm south border to swell off their pods, or the plants may be shifted into larger pots, and kept in a pit or other house to yield their fruit.

(To be continued.)

ASPARAGUS.

The following article from the pen of the Hon. John Welles, is entitled from its practical character, coming as it does from one of the *oldest* friends of the agricultural interest of the Commonwealth, a gentleman of great practical knowledge, based on long experience, and careful and exact experiments, to the particular attention of every farmer who would enjoy in his family, the luxury and pleasure to be derived from a good bed of Asparagus, or its great profits, when the article is raised for the market. We have had much experience with this subject. The most productive roots we ever knew, were set so deep, that the ground could be ploughed over them, the manure all turned in, and the bed be finely cultivated without the necessity of much manual labor.

We had prepared an article for our paper on this subject, which we postpone in order to give place to Mr. Welles,' which has been handed to us by an intelligent friend. If you attempt to raise Asparagus from the seed, it will be three or four years before it will be large enough to cut. The roots may be had for one or two cents apiece, 2 years old. Set them in a trench about 20 inches or 2 feet apart, well underlaid with rich loam or compost, as much as 8 or 10 inches below the surface. Thus the bed may be easily cultivated and the fruit the sooner realized. We hope to be able to give our readers Mr. Welles' experience in the use of lime for agricultural purposes. He has used 3000 casks or more in the course of his long life, and made some exact trials of it.—*Ed. Boston Cultivator.*

Among the earliest and most valuable productions which the opening spring presents for our use, is that nutritive and healthy plant, Asparagus. It is really a subject of regret, that this should be so universally acknowledged as a great luxury, and on every account be so desirable—and yet, not be more invariably had, and conveniently placed, near the door of the cultivator, for family resort.

There seems to be but one reason that can, with any degree of satisfaction, be assigned for this, and that is, the supposed intricacy, labor and expense of bringing forward what has been termed an Asparagus bed. The fact is, that most works on agriculture, are so loaded with the requisites for a good bed, that it is not to be wondered at that some repugnance is had, and some delay suffered in the undertaking.

It is believed, that in our climate at least, most of the trouble and expense is needless; and that a good and productive bed may be had in so cheap and simple a manner, that many who have been discouraged by the expense as well as the art and mystery of the process, will no longer be so influenced. But your readers have a right to expect some satisfactory reasons for this undertaking, before they engage in it.

The comparative results of several experiments will be stated herein, and some few observations submitted to the good sense of your readers, that they may draw their own conclusions and govern themselves accordingly.

One of my predecessors, in about 1765, from a wish for the convenience of a good asparagus bed, as well as a strong impression of the difficulties of having a good one, set about it in earnest. By all report, there was trenching or deep digging, paving with bricks at the bottom, a layer of manure low down, and much more dug into the soil. This, certainly, became a good bed, and it was always so considered. In about 25 years, or 1790, its decay was very observable, and it soon dwindled away to little or nothing. For some years, the privation was submitted to. But in about 1800, a new bed was made with the same labor and expense, except the paving. This too, proved a good bed. It lasted about the same time with the preceding, and some two or three years since, was allowed to go to grass.

About 12 years ago, while the last mentioned bed was in full bearing, I was led to think that much of the trouble might be avoided in the process and preparation for its culture. A piece of ground was taken on the same farm, of a deep rich soil. After a common corn crop was taken off, the land was ploughed and manured in the usual course. Holes were then dug 12 to 14 inches in depth, and about the same distance apart, and two or three shovels of compost manure was mixed with a part of the earth. The roots of a year's growth were then inserted at about six inches in depth. This bed has flourished, and been thought as productive as any whatever. I, at the same time, with a view of a more full and fair course of experiments, took another piece of land in another place of opposite character, being a thin light soil, and adopted a like course, and the result has been equally favorable. The only difference to be noted was, that the latter was more early in coming forward from the nature of the soil.

However rare it may be, that there is any over cultivation or preparation of soil for any vegetable production, it would seem here to be the case. The old forms appear to have been kept up, and to have discouraged a more general diffusion of this valuable plant. Doctor Dean, in his husbandry, has somewhat simplified this matter, but not sufficiently. The proposed mode of placing at 6, 8 and 9 inches, is quite too near. The duration of 10 or 12 years, is a mistaken one; it lasts with us nearly double that period.

The management of the bed may be given in a very few words. In the fall of the year, it is important to cover it with horse manure; in the spring it should be raked off, and the bed lightly forked over so as not to tough the roots. If the bed from frequent weeding becomes low, it may be raised with dock-mud to advantage. This produces no weeds, while the saline particles are favorable to its growth. Where this cannot be had, any rich loam may be

taken. Three years is agreed in as the most eligible period of cutting. No reason is perceived for supposing it a marine plant. The lightness of the hull, containing the seed, often may place it at high water mark where it may thrive well.

I am, &c., J. WELLES.

[*Boston Cultivator.*

THE ORCHARD.

THE FRUIT GARDEN.

BY DAVID THOMAS, OF CAYUGA COUNTY.

In traversing our wide spreading country, the pomologist must observe with regret that so few of the landed proprietors enjoy the luxuries of a fruit garden. The stately mansion, the comfortable farm-house, or the neat cottage, may meet his view in every direction; and well cultivated fields, loaded orchards, and abundant harvest, indicate that plenty reigns within; but if he stop and inquire for the finer fruit of the garden, what answer would he get? In nine cases out of ten, perhaps, their names would sound like the words of an unknown tongue; and the lord of the soil knows as little about them as he does of the *lotus* of Lybia, or the *mangosteen* of India.

How many of our free holders have ever tasted an *apricot?* How many of them cultivate the best *cherries?* How many know that delicious *plums*, always fresh from the tree, may be had from early wheat harvest till the ground freezes in autumn? How many eat the finest varieties of the *peach?* How many think of having "the circle of *pears?*"

These questions if duly examined and considered, would show our deficiency—for deficiency, omission, or neglect it must be, not to provide for all the reasonable wants of our families. Now fine fruit in abundance would supply a reasonable want. The relish for it is prevalent throughout every class of the population—from the honoured guest who regales on what is set before him, down to the school-boy who stops to plunder by the way.

Hundreds however, may think, or say, "We have no time to attend to such trifling affairs." This plea might be allowed while a man was struggling to save his property from execution, or his land from the foreclosure of a mortgage? but from him who basks in prosperity, it comes with an ill grace. Every-day comforts are not *trifles.* Luxuries which delight the palate, and conduce to health, are not *trifles;* yet well ripened fruit belong to this class; and we are

satisfied that much suffering, and many a doctor's bill, might be saved by a plentiful supply.

It may be said indeed, that fruit often causes illness. So grain often causes founder; and cold water often causes death; but it is the *excess* that proves baneful or destructive. Half-ripe, crude, unwholesome fruit have no attraction for him that has free access to the Fruit Garden: it is the unfortunate wight for whom nobody has planted or provided, that incidentally suffers.

One hundred trees in most cases, would furnish an ample supply for a family, and may be selected in the following proportions:

15	cherry trees,	at 37½ to 50 cents.
8	apricot do.	37½
25	pear do.	37½
15	plum do.	37½ to 50
20	peach do.	25
5	nectarine do.	25
8	quince do.	25
4	early apple do.	25

The common nursery prices are added; and the interest on this sum, whether *borrowed* or *appropriated*, would barely replenish a tobacco box through the year.

Now a Fruit Garden containing this number of trees, ought to yield a constant supply of *cherries* for two months; of *apricots* for one month; of *pears* for nine months; of *plums* for three months; and of *peaches* for two months.

One hundred trees would do well on *half an acre;* but if we allow a square rod for each tree, the Fruit Garden would only be ten rods square. Now a lot of this size may be conveniently appropriated on every farm; and where is the owner who cannot build forty rods of fence? Let him listen, however; thorny shrubs would afford the best protection—not against quadrupeds, but Plato's "two legged featherless animals;" and the sooner such a hedge is planted the better.

Unfortunately for the moral character of our population, fruit is too generally considered lawful plunder. The culturist is allowed to have a full exclusive right to his corn and potatoes—it would be infamy to steal them; but no exclusive right to his fruit—if they can get it. Thousands of honorable exceptions to this charge, indeed may be found, but it is not the less true that a great part of our population is tainted, and deserves to be branded with reproach.

The native fruit of a thinly populated country, growing without culture, and free for all—has doubtless had its share in producing this laxity of morals. "I would sooner have a hundred Irishmen around me than one Yankee," was the declaration of a sufferer, whose fruit had been plundered by the line of the Erie canal,

when that great work was in progress. But Europeans are generally more exemplary on this point than Americans—shame on us! When Professer Stowe was in Prusia, where the roads are lined with fruit-trees by order of the government, he observed a wisp of straw, attached to particular trees, to protect the fruit: a sufficient guard; but he suggested to the coachman that in America, it might only prove an invitation to plunder. "Have you no schools?" was the significant reply.

Yes, we have schools; but how many where the child is taught to respect his neighbor's property? Too often he acquires literature and vice at the same time. The State of New-York is famous for her schools and her prisons: the latter to supply the defects of the former system, which they do however, very imperfectly. Better let the mandate go forth, that the *morality of the Bible* shall be one of the chief objects of instruction. Teach her children to be honest, and then with science and literature, a foundation for true greatness and prosperity would be laid.

One thing is worth bearing in mind by those who purchase fruit trees: the *best kinds* are generally as *hardy as the worst*, and the difference in price fades into nothing when compared with the *difference in quality*. Nobody is satisfied with mean fruit after tasting better.

For a Fruit Garden, a western aspect is generally best, because it is the least subject to sudden transition of temperature. Severe vernal frost often prove injurious, or otherwise, according to the weather that follows. If the sky be overcast in the morning, and the air continues cold, little or no damage occurs; but when the sun breaks out warm, the injury is greatest; and the most so, where the trees are most exposed to his rays. For this reason, a hill or a wood on the east side, may prove very beneficial.

A nothern aspect would go far towards insuring regular crops of the peach, nectarine, apricot, if protected from the sun and warm winds by a belt of evergreens. On sandy soils especially, the reflected heat is often sufficient in autumn or winter, to *start* the buds; and snow and ice have been successfully* heaped round the trees to prevent this disaster; but a nothern aspect would render such labor unnecessary.

Dry firm ground should be chosen, preferring a sandy or gravelly loam, though clay will do with good culture. Wet, peaty, or spungy soils are apt to be frosty; for the radiation of heat is much greater than from firmer land.

Four ORDERS of arranging or planting trees have been employed, which the annexed figures exibit, all drawn by the same scale; and the distance between the nearest points (or trees) is intended for one rod. One hundred of these are represented in two of the

* We caused an apple tree to bloom a fortnight later than the rest of the orchard, by piling wood round it.

figures; but in the *quincunx*, owing to the vacancies in the sides, only ninety-eight are given, while in figure 3 there is a surplus, although some vacancies also occur at the sides.

The *first* ORDER requires less calculation, and is more generally in use than any other; but in laying out the ground, the boundaries should be first accurately determined; and the lines may then drawn across it with precision. No less care and attention in this respect however would be required by the other ORDERS.

The *quincunx* fig. 2, is only a series of squares laid off diagonally; and we cannot perceive any advantage that it has over the common square, though it was formerly much in fashion.

In the *third* ORDER, each tree (except at the sides) is surrounded by six others, all at equal distances—in other words, it stands in the centre of a *hexagon* made of six equilateral triangles. The trees are thus more equally distributed over the ground than by any other arrangement; and if cultivated by the plough, the furrow may be drawn in three different directions.

The *fourth* ORDER, as explained by the figure, may be considered as rather a new proposition; but where a team is to cultivate the garden, the plan has some decided advantages. The spaces between the rows, are wide enough for the deepest ploughing, though it should be more shallow near the trees, and in no case come close enough to touch them. A lighter plough with one horse walking in the last furrow, however, may continue the work, and save much manual labor. And where nutriment is so near, the roots will soon find it.

To lay out the garden according to this plan, draw the line for the first row, one rod from the fence; then leave a space two rods wide, and draw another line; and so on till the fifth row be completed, which will be one rod from the fence on the opposite side. This distance will allow room enough to plough between the trees and the fence, and for them not to hang over and tempt prowlers to reach the fruit on tiptoe.

Now 10 rods are 165 feet, and 32 subtracted leave 133 feet, the distance between the first and last trees in the row. For 20 trees, 19 intervening spaces are wanted; and 19 into 133 give seven feet for each space. The trees though crowded *lengthwise*, will find ample room to spread *laterally;* and our experience is decidedly in favour of this method.

It has been found very useful to keep swine and poultry in the Fruit Garden, on account of their services in destroying insects, and especially the curculio. In many instances no other protection has been necessary; but where the garden is large, the *plum*, *apricot* and *nectarine* should be planted in the same *quarter*, so that the hogs, if wanted, may be confined amongst them for a time. *Cherries* and even *peaches*, would also receive benefit from their presence, though these fruits generally suffer less from this insect than the former sorts. Cherry trees however, should stand near

together, so that from a central seat, a load of shot may protect them. We do not mean that all birds fond of cherries should be destroyed, but only such as take more than is a reasonable share, or that render no services in return.

Many people have a prejudice in favour of birds, that no well balanced mind should entertain. "Denizens of the air," have no more right to our property than denizens of the earth. Plunderers on two legs are not more respectable than plunderers on four legs; and cedar birds are entitled to no more regard than rats, unless personal beauty can atone for moral deformity.

Ornithologists often become partial to the subjects of their study, and side with them against the farmer and the gardener—magnifying their services and overlooking their trespasses. The laborer indeed, may drive the geese from the cabbages, throw stones at the crows, and even shoot a hawk—but not the birds that devour his cherries!

An amiable writer, in reference to such visitors, says, "Such has been the security they have felt on our grounds, and so great their increase, that not only *cherries*, *gooseberries*, and *currants*, but *apples*, *pears*, and *plums*, have been ravaged; and it may become a matter for serious consideration whether continuing our protection, we do not risk the TOTAL LOSS of some of the most desirable appendages to the dessert." Now if called into council, our advice would be prompt and brief: Treat them according to their doings. Make pies of the robins, orioles, and cedar birds—one chicken is worth a dozen of them for business; but save and protect the blue birds, warblers, and sparrows---these are always our friends.

Stunted trees always produce smaller fruit than when the same kind grows on vigorous branches; but the fruit suffers in *flavor* as well as in *size*. The trees should therefore be planted in deep beds of fertile soil. In dry seasons more especially, this provision is of great importance; and young trees treated in this manner are not only more likely to live, but grow much faster, bear much sooner, and bear much better fruit than on sterile land. All our observations go to justify these remarks.

When young trees are taken from the nursery, inquiry is often made how soon they will come into bearing? It is a very proper question, and it would be a proper answer to say:---Very much according to the treatment they shall get. When they are set in holes cut out of a sod, just large enough to receive the roots with some crowding, and are then left to take care of themselves, we have no right to expect them to come soon into bearing, nor to bear much when they do. Neither half starved cows, nor half starved trees would be found profitable. In the latter case especially, the interest on the purchase money is generally lost for some years, and not unfrequently the purchase too; but we hardly lose a tree in good condition, set in mellow ground which is kept mellow.

The holes for the trees should be not less than four feet diameter

and fifteen inches deep, but a greater breadth and depth is desirable. Place the soil round the brink of the hole, ready for filling in again; but scatter the harder sub-soil back out of the way. The hole should then be filled with the best earth, and rise a few inches above the general surface on account of its settling, first mixing three or four shovelfuls of cheap dirt with the part that is to come in immediate contact with the roots. It helps to keep the ground loose and moist, besides yielding much nutriment to the trees.

The roots of the trees when taken from the nursery should be carefully guarded against *drying or freezing*. If such care however, has not been taken, bury the *frozen* roots in the *ground* before they can thaw, and plunge the *dried* roots with several feet of the main stem into *water*, to soak there from 12 to 24 hours, till the moisture is sufficiently restored.

In planting, spread out the roots carefully, and let the best point against the strongest winds. Fine or mellow earth should fill up all the spaces between the roots, so that every fibre shall come in contact with it on every side; and in order to accomplish this intention more perfectly, throw in a pailful of water when the roots are covered, to wash the earth down, and to fill up every interstice.*

Newly planted trees being acted on as levers by the wind, often press the earth round their stems aside, and make an opening down to their roots, which in consequence suffer from both drought and disturbance. To prevent this disaster, it is therefore important that stakes should be provided to support and stiffen them. If driven before the trees are planted, they may be erect; if driven afterwards, they may be slanting; and in both cases, straw bands should be first wrapped once round to prevent the trees from chafing.

When trees are set in clay which holds water like a tub, they *soak* and often perish, especially if transplanted in autumn. This evil may be readily prevented, however, when the plough can be introduced, by drawing several very deep furrows where the trees are to stand, clearing out the loose earth with the shovel, and then employing chips, brush, potato tops, straw, cornstalks, or old rails, in constructing an under drain. Even if made with these materials, it would last for an age, for when mouldered into earth, the water would soak away along the seam.

Early in summer, after the trees are planted, let the ground be well dug round with the spade, commencing shallow near the trees, but deepening as soon as there is no danger of disturbing the roots. One spading is worth several hoeings, though the broad hoe may be profitably employed once a month after the spade has thoroughly loosened the soil. Trees managed in this way, will grow much faster than if the ground were just scratched over to

* An experienced horticulturist says, "Nine-tenths of the deaths from transplanting arise from the hollows left among the roots of trees by a careless and rapid mode of shovelling the earth about the roots."

the depth of an inch or so; and many of ours have grown as luxuriantly through the late excessive drought, as if they were in want of nothing.

The pruning of young trees to prevent their *splitting down*, is a very important operation. Many are greatly injured, and sometimes ruined, for want of this precaution. When the limbs diverge considerably, nature has provided a kind of net-work of the firmest wood to connect them together; but where two leading branches take nearly the same direction, they soon begin to press against each other; and the bark interposing, the wood is prevented from uniting. The consequence generally is, that when loaded with fruit, they are broken down by the wind. Now it is far better to cut off the limb in time. No material loss is sustained, as all the nutriment flows into the other branches, and increases their vigor.

The advantage of pruning apple trees, is generally known; and unless many of the limbs are cut out, some of the finest varieties become comparatively diminutive and insipid. The same care, however, is rarely extended to other fruit trees. When the twigs become stunted and mossy, sometimes they are trimmed by the tempest, or broken down by an untimely fall of snow; and then the benefits of pruning are manifest, even when done in that rough style. It is better, however, to depend on art than accident. As a general rule the best flavored fruit of the kind grows on the most vigorous branches well exposed to the sun and air; and with this idea constantly before us, we shall hardly do amiss when we apply the axe, the saw, or the chisel; though we may specify that cross branches should be lopped, and thrifty shoots that have room to spread, should be saved.

The mosses are parasitic plants, and should be expelled from the Fruit Garden. Lye is often used for this purpose on the apple tree; but we think it is no better than lime whitewash, which purifies the bark, and leaves it in a fine healthy condition. Once a year is quite sufficient.

Under deep snows, or snow drifts that settle round the trees, the *meadow mouse* often gnaws the bark to their great injury or destruction. This animal, however, always *works under cover;* and therefore the damage may be generally prevented by piling mellow earth round the stems, a foot high, late in autumn. The snow as it falls, is generally swept away from the pile by the wind; and even if the mouse should persist in climbing up on the earth—which we have not known him to do—he would soon come out into the open air, except when the snow was very deep.

Another method which has never failed with us, though requiring attention—is to *tread the snow firmly down round the stems;* and this should be carefully done every time that a deep snow falls, or whenever a drift is forming round the trees. The mouse, as he roots along, always turns away from the hardened snow.

Trees completely *girdled* by the mice, however, may be saved by setting grafts *early* in the spring to restore the communication between the two detached portions of the tree—in other words, by gratifying them together. Part of a small branch should be *inlaid*, both above and below; and if skilfully done and carefully coated over with grafting mud or wax, it will be very likely to grow, except on the peach or nectarine. We have succeeded in this way on a pear tree; but three or four should be set round the tree.

Cultivated CHERRIES belong to several species, which have spread into many varieties, and probably *hybrids*. The caterpiller sometimes feeds on the leaves; and the curculio punctures some of the fruit which in consequence becomes *wormy;* but no fruit tree yields a more certain crop, bearing every year without intermission unless the blossoms or young fruit be damaged by frost. Some kinds, however, as the *morello*, have been nearly destroyed in some parts of the country by the "BLACK GUM." This excrescence is caused by an insect which should be carefully sought for, late in the spring or early in the summer; and as soon as the bunches appear, the limb should be cut off and burnt.

The SLUG, another insect, feeds on the pulpy of the leaf, despoiling its verdure and wasting the vigor of the tree. It might almost be mistaken for the filth of some little bird. It soon renders itself conspicuous however, by its works; and though it sometimes attacks the foliage of other trees, the cherry leaf appears to be its favorite food. It may be destroyed by throwing fresh ashes among the branches by means of a shingle—every worm that is covered, perishes. It has been done when the dew was on the leaves; but if the slug is moist enough of itself to catch the ashes, it would be better to apply them when the leaves are dry, because the latter would neither be injured by the potash, nor defiled by the dust.

The cherry tree is more impatient of *nuisances* than most other kinds. Some have been destroyed by ashes thrown round the stem. Under two trees, the pigs were fed with corn, and the cobs scattered over the ground: both perished. In a slight depression near another, the water collected in rainy weather, and the geese dabbled in it: the tree died the same summer. Lime whitewash has also been charged with injuring the cherry tree; and if it be used at all, the experiment should be cautiously conducted.

The *morello* and *Kentesh* appear to be adapted to a greater variety of soils than the *heart* cherry trees; and may be employed as stocks for the latter in unfavorable situations. The outgrowing of the stock by the graft, constitutes no valid objection. We have never seen a tree endangered by such overgrowth, while the obstruction to the descent of the juices, favors the enlargement of the fruit. [*American Farmer.*

(To be continued.)

MISCELLANEOUS.

MODE OF MAKING SPERMACETI AND OIL FROM LARD.

We have already apprised our readers of the discovery that lard contains the ingredients for making good spermaceti candles and lamp oil. The mode of separating those ingredients we now copy from a phamphlet kindly sent us by the Hon. H. L. Ellsworth:

Mode of manufacturing Elaine and Stearine from lard &c. Patented by John H. Smith, 122 Front Smith-street, New-York city.

To all whom it may concern: Be it known that I, John H. Smith, of the city of Brooklyn, in the country of Kings, and state of New-York, have invented a new and useful improvement in the manner of separating from each other the elaine and stearine which are contained in lard, by means of which improved process the operation is much facilitated, and the products are obtained in a high degree of purity; and I do hereby declare than the following is a full and exact description thereof:

The first process to be performed upon the lard is that of boiling, which may be effected either by the direct application of fire to the kettle, or by means of steam; when the latter is employed, I cause a steam tube to decend from a steam boiler into the vessel containing the lard; this tube may descend to the bottom of the vessel, and be coiled round on the said bottom so as to present a large heating surface to the lard, provision being made for carrying off the water and waste steam in a manner well known; but I usually perforate this tube with numerous small holes along the whole of that portion of it which is submersed below the lard, thus allowing the whole of the steam to pass into, and through the lard. To operate with advantage, the vessel in which the boiling is effected should be of considerable capacity, holding say from ten to a hundred barrels. The length of time required for boiling will vary much, according to the quality of the lard; that which is fresh may not require to be boiled for more than four or five hours, whilst that which has been long kept may require twelve hours. It is of great importance to the perfecting of the separation of the stearine and elaine, that the boiling should be continued for a considerable period as above indicated.

My most important improvement in the within described process, consist in the employment of alcohol, which I mixed with the lard in the kettle, or boiler, at the commencement of the operation. When the lard has become sufficiently fluid, I gradually pour and stir into it about one gallon of alcohol to every eighty gallons of lard, taking care to incorporate the two as intimately as possible;

and this has effect of causing a very perfect separation of the stearine and elaine from each other by the spontanious granulation of the former, which takes place when the boiled lard is allowed to cool in a state of rest. I sometimes combine camphor with the alcohol, dissolving about one fourth of a pound in each gallon of alcohol, which not only gives an agreeable oder to the products, but appears to co-opperate with the alcohol to effect the object in view; the camphor, however, is not an essential ingredient, and may be omitted. Spirit of lower proof than alcohol may be used, but not with equal benefit.

After the boiling of the lard wich the alcohol has been continued for a sufficient length of time, the fire is withdrawn, or the supply of steam cut off, and the mass is allowed to cool sufficiently to admit of its being laded, or drawn off into hogheads, or other suitable coolers, where it is to be left at perfect rest until it has cooled down, and acquired the ordinary temperature of the atmosphere; as the cooling proceeds, the granulation consequent upon the separation of the stearine and elaine will take place and become perfect. The material is then to be put into bags, and pressed moderately, under a press of any suitable kind, which will cause the elaine to flow out in a state of great purity, there not being contained within any appreciable portion of stearine; this pressure is to be continued until the stearine is dry as it can be made in this way.

The masses of the solid material thus obtained are to be re-melted, and in this state to be poured into boxes or pans, of a capacity of ten or twelve gallons, and allowed to form lumps which I denominate blocks; then when removed from the vessels and piled, or stacked up for a week or ten days, more or less, the room containing it should beat a temperature of nearly 80°, which will cause a sweating or oozing from the blocks, and they will improve in quality; the blocks are then to be rolled in cloths or put into bags, and these places between plates, and submitted to very heavy pressure by means of a hydraulic press. After this pressure it is brought again into the form of blocks, and these are to be cut up by means of revolving, or other knives, or cutters; the pieces thus obtained are to be put into bags and subjected to the action of hot water, or of steam, in a press, until it becomes hard enough to be manufactured into candles, or put up for other purposes to which it may be desired to apply it.

The manner of subjecting it to the action of heated water, or of steam, is to place the bags containing the stearine in a box, or chest, into which heated water, or steam, may be introduced, but not to such extent as to fuse the stearine. A follower is then to be placed against the bags contained in the box, or chest, and moderate pressure made upon them; the material will now be found to have acquired all the required hardness, and to posess a wax-like consistence, such as would generally cause it to be mistaken for wax.

I am aware that alcohol has been used for the purpose of separating elaine and stearine from each other in analytical chemistry, but the lard or other fatty matter consisting of these substances, has, in this case, been dissolved in the heated alcohol, and the whole has been suffered to heat together; this process would be altogether inapplicable to manufacturing purposes, as the cost would exceed the value of the product. In my manufacturing process, instead of dissolving the lard in alcohol, I add a small proportionate quantity of the latter to the former, the whole of which is driven off at an early period of the ebulition, but by its presence, or catalytically, disposes the elaine or stearine to separate from each other, which they do after long boiling and subsequent cooling. I do not, therefore, claim the use of alcohol in separating the elaine and stearine from each other, by dissolving the fatty matter in heated alcohol, and by subsequently cooling the solution; but what I do claim as my invention, and wish to secure by letters patent, is the within discribed method of effectively promoting their separation, by incorporating alcohol, highly rectified spirits with the lard in small proportionate quantities; say one gallon, more or less, of said alcohol, or spirit, to eighty gallons of lard, and then boiling the mixture for several hours, by which boiling the whole of the alcohol will be driven off, bnt will have left the elaine and stearine with a disposition to separate from each other on subsequent cooling, as herein indicated and made known.

JOHN H. SMITH.

Witnesses—T. H. Patterson, H. S. Fitch.

MANAGEMENT OF NEGROES.

"There is another propensity among our negroes, always annoying, and sometimes attended with considerable loss to the master, and that is a disposition to pilfer. Perhaps there is no farmer, especially among those living near our towns, but is put to more or less inconvenience on this score. In common with others, I have suffered considerable from it, particularly in the loss of my pigs and shoats. It so happened, that if I took a special fancy for any pig, some rogue took an equal fancy for the same; and, somehow or other, he contrived to strengthen his fancy by "the nine points of the law." His fancy thus became stronger than mine, and I was obliged to yield.—This inconvenience I resolved to remedy, but the difficulty was to set about it in the right way. After much reflection, I became convinced that my own negroes were the rogues, or that they connived at it in others. The thing could not happen so often without their knowledge or concurrence. Whether, therefore, principals or accessaries, my own negroes were guilty, and the remedy was directed to them. With a view to this, I resolved to take from them all apology for stealing, as far

as *necessity* was concerned. I regularly gave to them an ample sufficiency of substantial food – bread without stint, and meat, besides fish, to the amount of four pounds per week.—And here let me indulge a passing remark, that of all the hogs I have ever seen, none is to compare to the Berkshire; for besides a fine, round, juicy ham for the master, it furnishes a large fat middling for the negro. And this is precisely the kind of meat which is suited to him. But to return to my expedient. My negroes were also made comfortable as to their clothing and lodging. In addition to these things, which I had reason to believe they would regard as their *rights*, I resolved to allow them other indulgences, which they could but consider as *privileges*. Accordingly, every one is allowed a small piece of good land, which he cultivates as his own. The crop which grows here is the negro's crop, and I exercise no control over it whatever. When the land is broken up for my crop, the negro is allowed time to break up his also; and when my crop is planted or cultivated, his is also; and when mine is gathered, he gathers his, and measures it in my presence, and I commonly become the purchaser.—Some persons, I am aware, object to the patching system, alleging that it furnishes facilities for stealing; but managed as above, I cannot think it fairly subject to that objection. On the other hand, good consequences, as I think result from it. It makes my negro satisfied, and it gives him an interest in his *home* which he cannot otherwise have.

But, besides his patch, I allow to each laboring hand a barrel of corn, or its equivalent in money, and the time of settlement is his great holiday, Christmas At this time, above all others, our negroes are anxious to have some spending money. Now, by means of this boon, so highly prized by them, I believe that I have succeeded in keeping my negroes perfectly honest for the last four or five years. The practical working of the thing is in this way: if a depredation is committed, *no matter by whom*, my negroes are responsible for it, and double its value is deducted from the Christmas present; or if a tool has been lost, its value is deducted in the same manner. If, however, the thief is given up, and all have an interest in his detection, the whole responsibility rests on him, and the others are of course exonerated. By this means I also secure my property from the depredation of the neighboring negroes. Thus, a few barrels of corn are made the means of saving my property to perhaps ten times the amount, the whole year; and I am also spared the painful necessity of frequent chastisements. This plan has thus far succeeded so much to my satisfaction, that I determined to state it publicly; and I am very much inclined to the opinion, that were it made general, it would go a great way towards breaking up the whole system of thieving among our servants." [*Far. Register.*

EFFECTS OF DIFFERENT COLORED RAYS UPON VEGETATION.

Plants will grow most luxuriantly beneath glass of a blue color. Beneath yellow and red glasses the natural process is entirely checked. Indeed it will be found that any period during the early life of a plant, its growth may be checked by exposing it to the action of red or yellow light.

This discovery is announced by Mr. Hunt, the Secretary of the Royal Polytechnic Society, in England, who says in reference to it—"Blue glass admits the blue or chemical rays, to the exclusion, or nearly so, of all others; yellow glass admits only the permeation of the luminous rays; while red glass cuts off all out the heating rays, which pass it freely. Yellow and red rays are destructive to germination, whereas, under the influence of violet, indigo, or blue light, the process is quickened in a most extraordinary manner."

—

ENGRAFTING WAX.

An experienced man in the business of engrafting, objects to the use of *rosin* or any other similar substance in his engrafting wax; such substances burn or heat too much. Two parts of beeswax and one of tallow make his wax. While this is in a melted state he dips cheap tape into it, and then winds the tape into balls. With this tape thus greased, he binds in his scion; with his composition he fills the cleft in the centre of the stock, and all places where the water or air could gain admission. When a stock is large, he binds around it a wide strip of woolen cloth, so that it shall extend about an inch above the stock and form a dish or cup, which he fills with earth. He never puts a scion in water. When a scion has been cut off at the top, he puts wax on the top.

[*Genessee Farmer.*

—

TO MAKE HOMMONY.

According to request, we herewith send you our plan for making hommony, hoping that others will be induced to send you their plans also, so that your readers may have an opportunity of testing them and thereby ascertain the very best mode of preparing this good and wholesome diet. Our plan is as follows:—We first hang on the pot, fill it half full of water, then shovel in some two gallons or more of the best ashes from the fire place, stir up and boil some ten or fifteen minutes, then take off the pot, fill it up with cold water, give it a thorough stirring and skim off the floating coals and other trash.—Let it stand and settle until it becomes clear; then dip or pour off the clear lie into another pot, hang it over the fire, and as soon as it is in full ebullition put in the corn, boil hastily and stir frequently until the corn is clear of husks, which will be within fifteen or twenty minutes if the ley be good. As

soon as the corn is clear of husks, take it out of the pot with a skimmer or ladle, put it in a pail or tub, carry it to the well and wash it through several successive waters until the water remains clear; the corn during washing to be rubbed between the hands so as to clear it of remaining husks. Five quarts of corn is as much as can be boiled to advantage in a six gallon pot. The hommony pot should be kept as full of water as it will boil without running over during the whole of the boiling process, which requires some eight hours or more. The hommony should never be stirred while boiling, for it will cause it to adhere to the bottom and sides of the pot and burn. It is better to keep the pot covered while boiling, so as to prevent it from being smoked; and it will also cause it to cook faster and be better flavoured. After it is sufficiently boiled, take it off and mash it in the pot with a wooden pestle while hot. The frying pan comes next which is sufficiently understood by all. A. B. GORDEN.

Cold Brook, Warren Co., Feb., 1842. [*Union Agr.*

TO RAISE GOOD RADISHES.

Take pure sand, some depth from the surface; or pure earth, below where it has been tilled or moved; or sea sand washed by the waves; make a bed in the garden, six or eight inches deep, and as big as you please; in this sow your radish seed, and they will grow well without manure, and be free from worms. We have tried it frequently, and never failed. [*Genessee Farmer.*

CUTTING OFF SPAVIN.

Did you ever know the spavin cut from a horse? If not, I can inform you that a few years since one of my carriage horses was badly spavined, so much so as to be almost useless. I had him thrown, then cut the skin immediately over the spavined bone in the shape of a A, then peeled it down until the bone was exposed. I then took a chisel and with a blow or two from a mallet I soon cut off the bone. The horse soon recovered; it has now been four years since, and not the least return of the disease.

[*Boston Cultivator.*

SOAKING CORN TO FEED HORSES.

One of the best farmers in the vicinity of Baltimore, saves one third of his corn, by soaking it before he feeds it to his horses. he places two hogheads in his cellar, secure from the frost, and fills them with ears of corn, and pours on water to cover it. When well soaked, he feeds it to his horses, and when one cask is empty, he fills it again and feeds from the other. By the time one is empty, the corn in the other is well soaked. The cobs are so well

soaked that the horses eat the whole, and they require only two two thirds as much corn when prepared in this way, and there is no doubt that this preparation and the eating the cob with the corn, renders the food more wholesome. [*Farmer's Journal.*

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THE PERPETUAL LAYING OF HENS.

We published some time since a plan for making hens lay perpetually, which consisted in occasionally feeding them with fresh meet, and keeping them without roosters. The editor of the Southern Planter in re-publishing it, says:

"When we met with the above astounding assertion, that the way to make hens lay is to kill the chickens cock, what did we do; resort to *Buffon*, *Wilson* or *Audubon?* No, we applied to better authority; we went straight to an old lady in this neighborhood, and asked her to solve our doubts, and she imformed us, that strange as the fact may appear, it is nevertheless true, that when hens are prevented from running with roosters, they continue to lay without interruption, and never show any desire to go to setting."

In matters connected with the poultry yard, we are not disposed to question the judgment or observation of a lady, and as friend Botts doubtless consulted one competent to decide the knotty question, we are constrained to subscribe to the opinion of his fair authority, and henceforth, when we desire to increase our supply of eggs, shall deprive our hens of the society of the gallant fellow, who now so proudly plays the part of a gay Lothario in our barnyard.

—

PRESERVING EGGS.

THERE is a patent in England for preserving eggs: the composition used is as follows, and by adopting the method, it is said, eggs have been kept two years:

"One bushel of quick lime, thirty-two ounces of salt, eight ounces of cream of tartar. Mix the whole together, with as much water as will reduce the composition to such a consistency that an egg, when put into it, will swim."

—

ADULTERATED FLOUR.

When you are about to try the quatity of flour, proceed as follows:—Grasp a handful, give it a sharp squeeze, and set the lump on the table. If it holds together and preserves the form of the cavity of the hand, the flour is good; but if the lump soon falls down, the flour is adulterated. When the adulterant is ground bones, or plaster of Paris, the lump of flour falls down immediately; but when whiting or pipe-clay is present, the lump keeps its form a little longer. The presence of much bran is detected

by the colour and feel of the flour; but in this case also the grasped specimen soon crumbles. Genuine flour retains the fine impressions of the grains of the skin much longer than any which is adulterated. Rub a little of the flour between the palms of your hands when they are moist; if you find any resistance, the flour contains whiting. Moisten the fore-finger and thumb with a little sweet oil, and rub a small quantity of the flour between them If the flour is pure, you may rub it for any length of time without its becoming sticky and adhesive; the flour in the mean time becomes nearly black. But if whiting be present, the flour will soon be worked up into the consistence of putty, which will retain the original white colour, or nearly so. Mix a little flour with water in a tumbler, then drop a little muriatic acid into the water. If any chalk or whiting be present, an effervescence will be produced by the discharge of carbonic acid gas. [*Domestic Chemist.*

EASY MODE OF MAKING A VAPOUR BATH.

Have a light deal frame made the length of the bed, and the breadth of an adult, with an arch at each end, and in the centre, formed with half hoops. This can be prepared in an hour by any carpenter. Remove the bed, or mattrass, lay some blankets on the sacking, let the patient be placed on it, and over him the frame covered with a blanket secured round the neck and at the feet; let the foot of the bed be before the fire place, at a little distance from it. Procure a common boiler, or large saucepan, which will hold from four to five gallons, fill it with water, and place it on the fire; the cover must have a tin tube fixed to it, long enough to carry to the feet of the bed, and insert about four inches into the bottom part of the blanket, where it is secured round the patient's feet; when the water boils, the vapour will be conveyed into the frame, and a complete vapour bath is thus prepared at an expense of not more than twenty shillings. [*Domestic Medical Pocket Book.*

GARDENER'S CALENDAR FOR JULY.

VEGETABLE GARDEN.

Sow early Dutch turnips, ruta baga, carrots, parsnips, cabbages, cauliflowers, brocoli, endive, radishes, spinach. Plant snap-beans, Irish-potatoes, melons. Transplant cabbages, celery, cauliflowers, brocoli, tomatoes and leeks.

Remarks—A few only of carrots; parsnips, spinach or radishes, should be sown, as it is not very probable that they will succeed, unless well protected from the sun for some length of time, whilst young The early Dutch turnips, should also be sown, towards the middle and last of the month, *in small quantities*, as they are very likely to rot when about the size of a dollar. The Irish potatoes will be fit for use in October, and the tomatoes will furnish a supply when the spring sown crop has ceased to bear, and then continue until killed by a frost.

Agricultural and Horticultural
REPOSITORY.

NO. 81 EAST-BAY, CHARLESTON, (SO. CA.)

FRESH AND GENUINE
GARDEN AND FIELD SEEDS.

THE SUBSCRIBER *has received his Full supply of GARDEN and FIELD SEEDS, consisting of all the varieties enumerated below, and several others which are new. Among them the highly prized WHITE BELGIAN CARROT, which unites the flavor of the Carrot and Parsnip, (for an account of which see current vol. So. Agr., p.* 411.) *Also, WINTER RYE, said to be equal for pasturage to the Carolina Rye; and SEED BARLEY.*

Twenty-five varieties of PEAS, among which are Cedo Nulli, Extra Early Dwarf, Early Warwick, Knight's Marrowfat, Blue Scymetar, Dwarf Sugar of Holland, Spanish Marrow; and all of the old varieties.

BEANS—nineteen varieties, among which are Dutch Dwarf, Davenport, China, Royal Dwarf, Horticultural, &c. &c.

BEETS—eight varieties, consisting of Early Turnip (red and yellow,) Long Blood, Yellow Castelnanderry, Red do., Silesia or Sugar, &c. &c.

CABBAGES—twenty-nine varieties, among which are Early Paris Superfine, Nonpareil, Hope, Vanack, Early York, Ox heart (large and small,) Battersea, St. Dennis, Early Dutch, Large do., Large Pancallier Savoy of Tours, Monstrous French Savoy, &c. &c.

BROCOLI—three varieties.

CAULIFLOWERS—six varieties, viz.: Tender or Spring, Half-hardy for autumn, Hardy of Paris, Dutch Hardy, Early and Late.

CARROTS—nine varieties. PARSNIPS—two varieties. CELERY—seven varieties. CRESS—three varieties. LETTUCE—nine varieties. CUCUMBER—four varieties. SQUASHES—seven varieties. MELONS *Musk*—nineteen superior varietles *from France*, embracing the Honfleur, Canteleups, Sugar, Persian, Winter, and many others in high estimation. Also, six varieties of American. WATER-MELONS—three varieties. KOHL RABBI—four varieties.

Together with many new and superior varieties of VEGETABLES not enumerated above, for which we refer to our printed catalogue.

ALSO,

FLOWER SEEDS, DAHLIA ROOTS, (some splendid varieties,) BULBOUS ROOTS, ROSES, GERANIUMS, GREEN-HOUSE PLANTS, FRUIT TREES,

IMPLEMENTS.

His STOCK OF IMPLEMENTS has been considerably increased, and embraces a larger variety than has ever been offered in this market. His PLOUGHS are from the most celebrated makers of New-England, and have taken numerous premiums; in addition to which, he has all of the MORE COMMON KINDS, and can accommodate his customers with Ploughs from $3 to $12, according to size and quality. He has also a LARGE ASSORTMENT OF STRAW-CUTTERS and CORN-SHELLERS, with EVERY OTHER IMPLEMENT REQUIRED on the FARM or PLANTATION.

Printed Catalogues will be furnished gratis on application (*post paid,*) and all Orders promptly executed. SEEDS and IMPLEMENTS carefully packed and sent by Steam-boat Rail-road, to any part of this State, North-Carolina or Georgia.

November 4th, 1841. J. D. LEGARE.

TO CORRESPONDENTS AND SUBSCRIBERS.

We copy from the cover of the *Farmer's Register*, a notice which suits the distant Subscribers of the *Southern Agriculturist*, in many respects; and which will induce us to adopt the same course to all who do *not pay up*.—And we notify, that from the want of attention to these things, our journal must share a similar fate. As an additional proof of the heedlessness of distant subscribers, and a *want of honesty*, we insert a letter from a Post-master in Alabama; and this is not the only one of the kind that we have been in the habit of receiving for years past. Confidence being thus broken up, we must stop too at the end of the year. Our Friends have long sustained us, for which they will accept our thanks a hundred fold. Perhaps we may amuse them with other originals, before we close. But to the letter:

"Richmond, Dallas County, (Ala.), July 7th, 1842.

MR. J. D. LEGARE,

Editor of the So. Agriculturist:

SIR,—There has not been one of your Agriculturists taken from this office this year. I have presented them to the Subscribers repeatedly, who have invariably refused them without assigning a reason.

A. W. COLEMAN, *P. M.*"

From the Farmer's Register.

NOTICE TO INDEBTED SUBSCRIBERS.

The subscribers to the Farmer's Register whose payments are in arrear, are earnestly requested to anticipate the bills to be sent next month, by remitting their dues before that time. No one indebted for more than the current volume can be at a loss to know the amount, if he will refer to his last notification, on the cover of No. 6, Vol. IX. and add to the amount there stated, $5 now due, for 1842, from all who have not paid already.

Of the very many former subscribers still in arrears, and whose names have been at different times erased for failure of payment, it is not expected that they will now attend to notices of their debts more than last year—and then, of all the bills sent to such persons, for subscriptions, amounting to several thousands of dollars, there were not enough paid to remunerate the actual labor and expense of making out and mailing the accounts. The next will probably be the last notice of indebtedness sent to these or to any other and less remiss subscribers. When the interests of the present proprietor in the Farmer's Register establishment shall be sold or otherwise transferred, the list of subscriptions then due will at the same time be exhibited for sale, and sold for whatever the supposed value and character of the names of the debtors will bring.

The bills of indebted subscribers will be mailed without being sealed—not from disrespect, or to cause unnecessary exposure, but because in these days of *bankrupt notices*, few persons will take from the post office a printed letter not post-paid, as they suspect it to be merely an additional tax of postage imposed by some totally bankrupt debtor. The editor has himself received sundry such letters, not one of which was post-paid, and from individuals not one of whose estates will ever pay so much dividend as well reimburse their tax of postage then so imposed.—EDITOR